Quapaw Tribe of Oklahoma
CERCLA, Section 104

Grant Application for

Remedial Response Cooperative Agreement
10/1/2012 through 9/30/2014

(Revised 10/8/13)

Submitted to the

U.S. Environmental Protection Agency, Region VI
Dallas, Texas

Prepared by the

Quapaw Tribe of Oklahoma
Environmental Office P.O.
Box 765
Quapaw, Oklahoma 74363

(918) 542-1853

I. INTRODUCTION

A. Request for Funding

The Quapaw Tribe Environmental Office (QTEO) is requesting financial assistance from the U.S. Environmental Protection Agency (EPA) to fund the remediation of a parcel of tribal trust land (commonly known as the Catholic 40) for a two (2) year period between October 1, 2012 and September 20, 2014 in Federal Fiscal Years (FFY) 2012 through FFY2014 (FFY12/14). This request is made pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Acts as amended, 42 United States Code (U.S.C.) §9601 to 9675 (CERCLA). This cooperative agreement contributes to the attainment of environmental results under Compass Program Results Code (PRC) 303DD2 as noted in EPA's Strategic Plan, Goal 3, Objective 3.2, Subjective 3.3.3, Annual Performance Goal 3.3: Assess and Clean Up Contaminated Land, by enabling Tribes to lead or participate in Superfund cleanups, and to consult with EPA before, during, or after Superfund Cleanup activities as provided in CERCLA §121(f).

The QTEO funding request for $2,635,882 will allow for the remediation of the Catholic 40 in a manner consistent with EPA's Record of Decision (ROD) for Operable Unit No. 4 (OU4) at the Tar Creek Superfund Site. This funding request has been prepared in accordance with 40 CFR Part 35 Subpart O, Sections 36.6100 through 36.6120.

B. Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people.

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement.

The following personnel are employed by the QTEO (see Organizational Chart in Appendix A):

- Environmental Director – Tim Kent, PG
- Environmental Engineer – Craig Kreman

- Environmental Grants Manager – Ardie Blair
- Environmental Specialist – Susie Attocknie
- Environmental Technician- Cathy Sloan

II. PROJECT NARRATIVE

A. Site Description

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma.

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and one (1) known mine shaft. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00 (see Site Location Map in Appendix B). An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (i.e. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have been identified at the Catholic 40.

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region.

B. Culturally and Historically Significant Nature of the Catholic 40 Property

The Catholic 40 is a culturally and historically significant site to the Quapaw Tribe. Beaver Creek flows along the southwestern boundary of CB011 before flowing through the Tribal Powwow Grounds approximately 0.25 miles downstream of the Catholic 40. Due to the cultural significance of the water body, the Quapaw Tribal Business Committee has designated Beaver Creek as an Outstanding Resource Water (ORW).

The Catholic 40 also contains evidence of important events in the history of the Quapaw Tribe of Oklahoma. During recently undertaken reconnaissance efforts involving QTEO, the Quapaw Tribal Historic Preservation Officer (THPO) and the Bureau of Indian Affairs (BIA) Regional Cultural Preservation Office, several historic structures have been identified along the eastern portion of the site. These historical structures are associated with a Catholic church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma, surrounding tribes, and the community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Outbuildings for farm animals and farming equipment also occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins. Mining began at the site in 1936 and mine waste may cover remnants of the historic buildings and other features associated with the church and school.

In order to protect and preserve the history of the Quapaw Tribe, extra precaution will be exercised during the remediation of CB011in order to protect water quality in Beaver Creek and mitigate the potential for accidental damage or removal of any structures or associated items which may help the Quapaw Tribe come to a better understanding of their history.

C. Proposed Site Specific Statement of Work (SOW)

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

Task 1: Site Remediation

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.

2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.

3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.

4. Repair of southern access road and associated water crossings (justification for repairing and utilizing southern access road is being submitted to EPA under separate cover).

5. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities.

6. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.

7. Water management, including collection, containment, and disposal of decontamination water and streambank stabilization.

8. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.

9. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.

10. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

Task 1 Method:

The Quapaw Tribe will self perform the remediation work on the Catholic 40 site. The Quapaw Tribe employs professional construction managers, project administrators, superintendents, construction coordinators, safety and health professionals, and accountants that specialize in the management of construction projects. Over the past 5 years, the Quapaw Tribe has successfully managed over $400 million of in place construction projects The Quapaw Tribe Environmental Office will maintain a consistent management capacity for the Catholic 40 project by retaining an engineering support contractor to provide assistance in development of site-specific plans, generation of remediation documents, and on-site management of remediation activities.

Task 1 Cost Estimate:

A summary of the estimated costs associated with the completion of Task 1 is included below in Table 1. A more detailed budget breakdown for Task 1 may be found in Appendix C.

Table 1: Summarized Cost Estimate for Task 1

Subtask Description	Subtask Cost
Preparation of Site-Specific Plans, Pre-construction Submittals, & Project Engineering Support (performed by engineering consulting firm)	$135,000
Site Mobilization	$104,102
Site Preparation	$151,320
Preparation of Access Road	$125,580
Removal, Transportation, & Disposal of Source Material & TZ Soils	$1,528,290
Filling & Capping of Mine Shaft, Cased Borings, and Removal of Asphalt Piles	$50,200
Water Management and Streambank Stabilization	$67,770
Confirmation Sampling and Analysis	$14,550
Decontamination and Demobilization	$148,850
Follow-Up Monitoring and Maintenance of Pre-Operational Remedy	$19,000
Health and Safety Incentive	$26,000
Performance and Payment Bonds (if needed for contracts above $150,000.00)	$30,000
TASK 1 TOTAL	**$2,400,662**

Task 1 Planned Schedule/Output:

The estimated timeline for completing the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization). See the detailed project timeline on page 10.

Task 2: Tribal Project Management

The QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of the Catholic 40 project. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 12 months of the 2 year project period. Consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

Below is a list of the primary tasks that the QTEO will undertake in overall project management, followed by a list of QTEO staff and the corresponding percentage of their time that is anticipated to be spent on that task for Year 1 and Year 2 of the project.

- Generation of Requests for Proposals (RFPs): This will include RFPs for the engineering support contractor as well as the remediation contractor that will be assisting the QTEO.

Environmental Director's Time:	**Year 1 = 8%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 7%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Development and administration of contracts: This will involve negotiating and reviewing contracts, once contractors are selected. The Tribe's attorney will be involved in this process.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- On-site inspection. This will include having a representative of the Tribe on site whenever work is performed to ensure that work complies with the plans and specifications and that historically significant features are identified and protected. On-site personnel representing the Tribe will be qualified and experienced in inspection of remediation projects and will be familiar enough with the engineering plans and all other project related documents (i.e. QA/QC plans, and Health and Safety Plan, SWPPP, SAP, SOPs, ect) to ensure contractor compliance with the requirements in these documents. On-site personnel shall keep daily logs and take photographs of site activity. It should be noted that there will be Tribal representative, who is trained in the identification of historical features and artifacts, on site during certain phases of the remediation in which there may be a possibility of encountering these artifacts and/or features.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 3%**	**Year 2 = 1%**

Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)

- Scale Operation: A qualified tribal employee will be assigned to man and operate the on-site truck weight scale.

Tribal Scale Operator: $12,800 (8 hrs./day for 80 days @ $20/hr.)

- Task assignment, scheduling, contractor coordination. This will include day-to-day communication with project staff and contractors regarding ongoing and planned activity as well as addressing project related issues as they arise.

Environmental Director's Time:	**Year 1 = 3%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Document review. This will include review of submittals from the remediation contractor (progress reports, engineering drawings, work measurement, pay requests, lab results, inspection reports, photographs, etc.).

Environmental Director's Time:	**Year 1 = 6%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 9%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Meetings: QTEO staff will participate in project related meetings including daily tailgate meetings, progress meetings, safety meetings, consultation meetings with EPA, and other meetings as issues arise. This will likely include utilization of the engineering support contractor to represent the Tribe when appropriate QTEO staff persons are unable to attend some meetings.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Coordination/consultation with, and reporting to, EPA: This will include ongoing communications and meetings with EPA's Remedial Project Manager (RPM) assigned to the project; and generating the required quarterly reports.

Environmental Director's Time:	**Year 1 = 5%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Outreach to Tribal public: This will include public meetings, newsletter articles, information availability outreach efforts, and reporting to Tribal Business Committee

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 3%**
Environmental Grants Manager's Time:	**Year 1 = 5%**	**Year 2 = 2%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 1%**

- Short-term remedy monitoring: It is anticipated that some monitoring of the Catholic 40 remediation will be required during the grant period to ensure that the remedies are performing as designed before becoming operational.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 5%**	**Year 2 = 3%**

- Training and travel: It is anticipated that travel and training will likely be required as the grant period progresses. Training is assumed to include 40-hour OSHA HAZWOPER training for Tribal non-contract personnel who will be visiting the site (CERCLA requires

this training for all who enter onto a Superfund work site). It is also assumed that there will be at least 2 Trips to EPA Region 6 offices in Dallas for meetings with EPA staff regarding project progress and other site-related issues.

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 2%**	**Year 2 = 2%**

- Grant administration: This will include, but not limited to, budget tracking, records/document management and storage, and communications with EPA grant administrative staff.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 10%**	**Year 2 = 8%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Summary of Time and Effort Required:

Environmental Director's Time:	**Year 1 = 30%**	**Year 2 = 20%**
Environmental Scientist's Time:	**Year 1 = 30%,**	**Year 2 = 13%**
Environmental Grants Manager's Time:	**Year 1 = 15%**	**Year 2 = 10%**
Environmental Technician's Time:	**Year 1 = 10%**	**Year 2 = 7%**
Tribal Scale Operator: $12,800		
Tribal Historic Preservation Specialist: $9,600		

Task 2 Method:
The Tribal project management tasks listed above will be accomplished by utilizing QTEO staff according to their workload. The Tribe's engineering support contractor will be utilized as needed. All time and effort expended in completing these tasks shall be reported in the quarterly reports to EPA.

Task 2 Cost Estimate: **$153,318.00[1]**

note 1: Includes personnel costs and fringe benefit costs for Quapaw Tribe staff, travel, training, supplies, and indirect costs (see the detailed budget breakdown attached in Appendix D).

Task 2 Planned Schedule/Output:

It is anticipated that the Tribal project management tasks listed above will be conducted and completed throughout the grant period according to the schedule established by the remediation contractor. All activity related to remediation of the Catholic 40, including Time and Effort (T&E) reports will be included in the Quarterly Reports to EPA.

Planned Schedule:

The above-listed activities shall be conducted as needed and as issues arise. General Tar Creek involvement activity will be reported to the EPA in Quarterly Reports. A report on all Superfund activity will be forward to the Tribal Business Committee on a monthly basis.

Task ID #	Task Description	Proposed Begin Date	Proposed End Date	Time Required (Days)	Task Status [1]
1	Initial grant award of $500,000	Oct. 1, 2012		---	Completed
2	Develop Engineering Support RFP	Oct 1, 2013	Oct. 15, 2013	14	Completed
3	Solicit Bids for Engr. Support Contractor	Oct. 16, 2012	Nov. 6, 2012	21	Completed
4	Review Bids for Engr. Support Contractor	Nov. 7, 2012	Nov. 14, 2012	7	Completed
5	Select Engr. Support Contractor	Dec. 1, 2012		---	Completed
6	Development of Site-Specific Plans (Health & Safety, Community Relations, QAPPs, etc.)	April 15, 2013	October 7 , 2013	31	Pending
7	Pre-Construction Meeting	October 21, 2013		---	Pending
8	Mobilization and Site Preparation		October 21, 2013		Pending
9	Source Material Removal	October 22, 2013	February 18, 2014	120	Pending
10	Site Restoration	Feb 19, 2014	March 14, 2014	30	Pending
11	Post-Construction Mtg/ Final Walkthrough	March 14, 2014		---	Pending
12	Decontamination and Demobilization	March 17, 2014	March 28, 2014	14	Pending
13	Remedy Monitoring (revegetation, filled shaft, etc.)	March 31, 2014	Sep 30, 2014	180	Pending
14	Develop and Finalize Remedial Action Report	Oct 1, 2014	Dec 30, 2014	120	Pending
15	Finalize Grant Close-Out	Jan 1, 2015	May 31, 2015	150	Pending

[1] Tasks identified as "Completed" have been completed as of 12/21/2012 with funds from the initial grant award of $500,000 for "administrative purposes". The timeline for successful completion of Tasks identified as "Pending" are subject to EPA's approval of this revised workplan and budget and subsequent review of Site Specific Plans.

D. Designation of Lead Site Project Manager

The lead site project manager for the Catholic 40 remediation will be Mr. Tim Kent, PG Environmental Director of the Quapaw Tribe Environmental Office (QTEO). The QTEO has coordinated with other Tribal departments including, but not limited to, Quapaw Services Authority (QSA), the Tribal Realty Department, and the Tribal Historic Preservation Department (THPO) in the process of planning the proposed remedial response activities.

E. Community Relations Plan

A draft site-specific Community Relations Plan (CRP) has been developed by the Quapaw Tribe, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(iv). The Tribe will prepare Fact Sheets for Tribal members, host informational meetings, and post a sign at the site to inform the public about what is happening and where to call if they see any criminal activity or trespassing on the site. The Quapaw Tribe of Oklahoma will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan. The CRP will be finalized and reviewed by EPA before initiation of the RA.

F. Health and Safety Plan

A site-specific Health and Safety Plan (HSP) will be developed by the Quapaw Tribe and submitted to EPA Region VI before field activities begin, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(v). The HSP will ensure the protection of on-site personnel and area residents. The schedule for the development and finalization of the HSP is included in the proposed project timeline in Section 2.C.

G. Quality Assurance

The QTEO is well aware of EPA's unwavering commitment to Quality Assurance and Quality Control (QA/QC). The QTEO is equally committed to the generation of sound, scientific, quality assured data along with the successful completion of quality projects. The QTEO is currently administering five (5) EPA grants under an existing EPA-approved Quality Management Plan (QMP). All remedial activities for the proposed project will comply with the existing Site-wide Quality Assurance Plan developed for EPA by CH2M Hill. The Quapaw Tribe has developed site-specific QA/QC Plans for both sampling and analysis and for excavation/construction.. Quality Assurance Project Plans (QAPPs) have also been developed for all proposed data collection activities associated with successful completion of the project. All QAPPs and QA/QC Plans will be submitted to, and approved by, EPA Region VI before field activities begin.

H. Project Deliverables

Project deliverables will be both administrative and technical in nature. The administrative/grant deliverables will include 1) quarterly reporting to the EPA-designated Project Officer on the progress made toward individual workplan tasks along with financial updates, 2) a final report documenting the successful completion of all workplan tasks, and 3) all other certifications and grant forms typically required to successfully administer and close-out an EPA grant (i.e. FSR, MBE/WBE, etc.) The technical/remediation deliverables will include 1) weekly conference calls with the EPA-designated Remedial Project Manager (RPM) to report on the progress made in planning, implementing, and finishing the proposed remedial project, 2) a final walk through with EPA staff and Tribal representatives prior to project close-out, and 3) a remedial action report upon project close-out. The target dates for these project deliverables are incorporated into the proposed project timeline in Section 2.C.

III. CERCLA ASSURANCES

A. Operation and Maintenance

The Quapaw Tribe of Oklahoma will assume responsibility for all future operation and maintenance of the CERCLA-funded remedial action at the Catholic 40 for the expected life of the action as required by CERCLA Section 104(c).

B. Cost Sharing

The Quapaw Tribe of Oklahoma will not share in the cost of the CERCLA-funded remedial action at the Catholic 40 as Indian Tribes are not required to share in such costs according to 40 CFR Part 35 Subpart O, Section 35.6110(b)(3).

C. Twenty-Year Waste Capacity of Off-Site Disposal Location

A relatively small amount of source material will be disposed of on-site in an open mine shaft at the Catholic 40. Otherwise, all remaining source other material and TZ soils will be disposed of off-site at the EPA-approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK or at an approved chat processor's site. The repository is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the remediation of the Catholic 40.

D. Notification of out-of-an-area-of-Indian-Country transfer of CERCLA Waste

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the

Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), or at an approved chat processor's site, according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120.

IV. BUDGET NARRATIVE

See detailed budget breakdowns attached as Appendix C and Appendix D.

Appendix A

QTEO Organizational Chart

Appendix B

Distal 8 Site Location Map

Appendix C

Detailed Construction Budget Spreadsheet

Appendix D

Superfund Remedial Response Budget

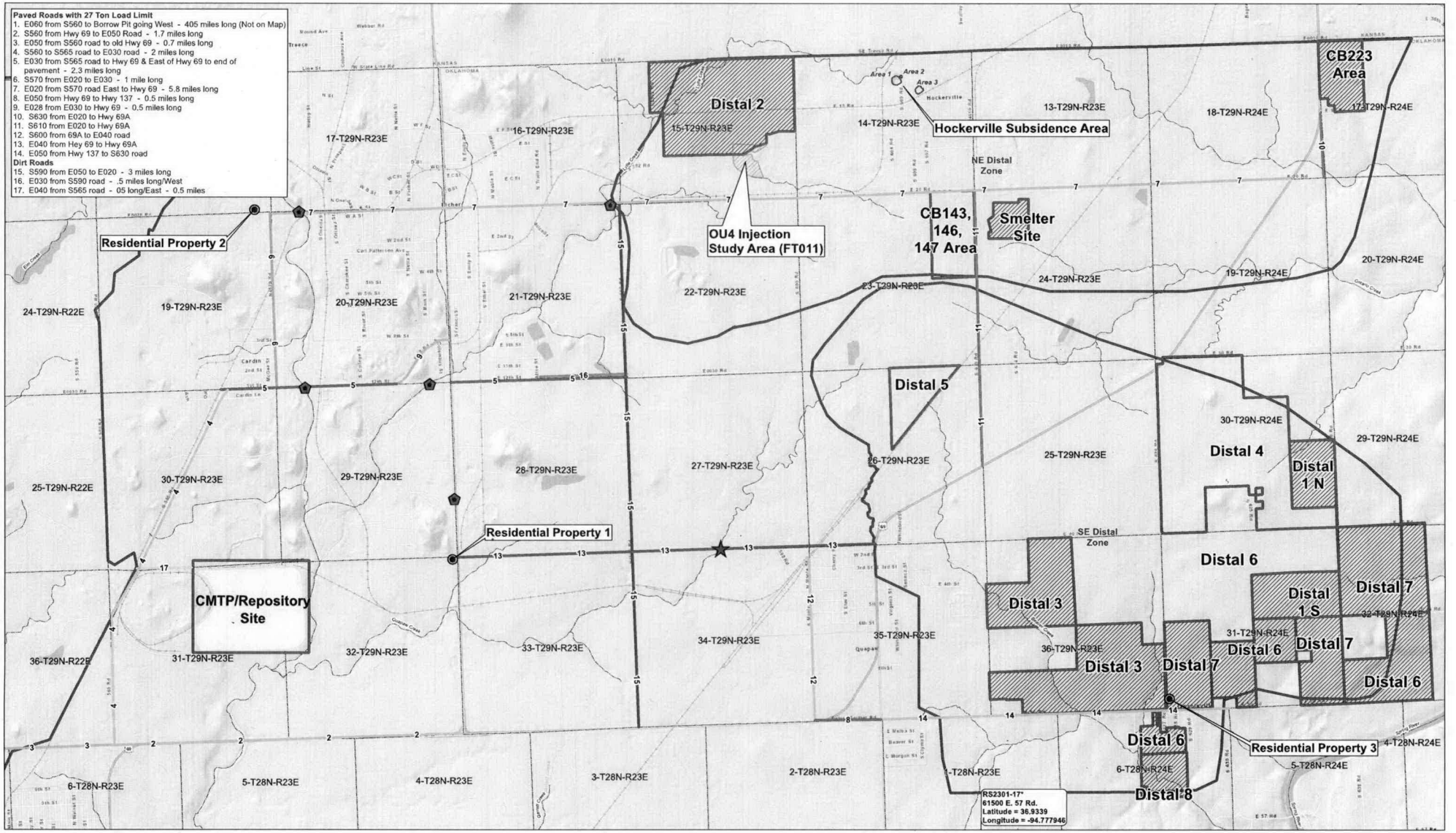

Figure 3-1
Tar Creek OU4 Site Map
Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

CH2MHILL

Construction Quality Assurance Plan (Version 1.1)
Tar Creek Superfund Site
Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma
November 2013

Prepared for

U.S. Environmental Protection Agency

Prepared by

Quapaw Tribe of Oklahoma

Construction Quality Assurance Plan (CQAP)
Version 1.1
DISTRIBUTION LIST

Source Material Operable Unit 4 Remedial Action
SE Distal Zone, Distal 8, Chat Base 011 (Catholic 40)
Ottawa County, Oklahoma

Copies of this CQAP have been distributed to the following people:

Rafael Casanova, P.G. - U.S. EPA, Region 6, Remedial Project Manager

Tim Kent, P.G. - QTEO, Environmental Director / Project Manager

Craig Kreman - QTEO, Quality Assurance Manager

Chris Roper – QSA, Construction Manager

Table of Contents

Appendices

1.0 INTRODUCTION

The Quapaw Tribe strives to achieve the utmost quality in all of our construction projects by implementing the following quality assurance plan for all projects. QTEO shall be responsible for quality assurance to observe and verify that the required QC activities are indeed completed in accordance with the contract requirements.

The Quapaw Tribe defines Quality as achieving our customers' expectations by meeting the following objectives:

- Establishing and maintaining open and productive communication.
- Fostering cooperation through partnering and team work.
- Promoting a trusting environment.
- Coordinating and implementing the Contract Documents.
- Completing the Project on time and within budget.

The following are the objectives of this CQAP:

- Provide procedures for delivering the appropriate quality of services and products to meet the Remedial Action Objectives specified in the Tar Creek Superfund Site Source Material Operable Unit 4 Record of Decision.
- Establish clear responsibilities and accountabilities for key technical and quality staff and management decisions related to this project.
- Build quality into all aspects of this project.
- Enable the identification and resolution of performance problems and challenges and provide a standing process for corrective measures and continuous improvement of site practices.
- Assure the highest level of technical and management practices to consistently meet the project quality objectives.

2.0 PROJECT DESCRIPTION

The Catholic 40 is located in the Site's Operable Unit 4 SE Distal Zone and is classified as Distal 8. Distal 8 includes one (1) chat base (CB011) and one (1) known mine shaft. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this project. This project addresses only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

3.0 QUALITY ASSURANCE

The Tribe emphasizes the following basic categories relating to quality:

- Material Quality
- Installation Quality
- Means and Methods Quality
- Administrative Quality
- Safety Quality

3.1 Material Quality

Material quality will be controlled through the comparison of the requirements of the contract documents to actual purchased materials. This will be achieved by review of construction documents, coordination through the submittal process, and through the inspection process.

3.2 Installation Quality

Installation quality will be controlled through document control, submittal verification, and coordination of trades through the inspection process.

3.3 Means and Methods Quality
Means and Methods Quality will be controlled through the construction planning and coordination of required construction methods and techniques.

3.4 Administrative Quality
Administrative Quality Controls will be established and maintained through the implementation and periodic review of the following:

- Preconstruction Site Planning
- Material Handling and Control
- Scheduling
- Test Reports
- Inspection Reports
- Punch Lists
- As Built Drawings
- Logs (See DOCUMENT CONTROL)

3.5 Safety Quality
Safety Quality standards will be controlled through the implementation and maintenance of the tribe's safety program.

4.0 ORGANIZATION

EPA Region 6 Remedial Project Manager
Mr. Rafael Casanova is the EPA Region 6 Remedial Project Manager (RPM) for this project. Mr. Casanova serves as the EPA liaison for the project and has the ultimate responsibility for overall EPA management of the project. Any significant changes to the planned activities, site access issues, public outreach issues, or significant problems encountered will be reported to the RPM by the Project Manager (PM) or designee. Any changes in the systems defined in the site-specific plans for this project must be approved by the RPM.

Tar Creek Superfund Stakeholders
Representatives for the stakeholders of the Tar Creek Superfund Site include Quapaw Tribe, Ms. Jonna Polk/Bureau of Indian Affairs (BIA), Mr. David Cates/Oklahoma Department of Environmental Quality (ODEQ), and Mr. Dennis Datin/ODEQ.

QTEO Project Manager (PM)
Mr. Tim Kent serves as the PM for this project. The PM functions as the primary interface between the RPM and the project team and is responsible for meeting all technical, financial, and scheduling goals. The PM will be the central point of contact for all matters concerning the project. The PM site management responsibilities include:

1. Ensures proper management of EPA/Tribe Superfund Cooperative Agreement (SFCA) grant related to this RA.
2. Defines project objectives and develops a detailed Work Plan and schedule.
3. Establishes project policies and procedures to address the specific needs of the project as a whole, as well as the objectives of each task.
4. Advises the RPM of technical progress, program needs, potential problems, and recommended solutions.
5. Organizes, monitors, directs, and controls staff and other resources needed to execute the task order within budget and schedule restraints, and establish clear lines of communication within the QTEO organization.
6. Familiarizes field leaders and support staff with the project's special considerations.
7. Reviews the work performed and overall task performance for quality, responsiveness, timeliness, and budgetary considerations.
8. Reviews external reports (deliverables) before submission to the EPA.
9. Represents the project team at meetings with the EPA and other project stakeholders.

Quality Assurance Manager (QAM)
Mr. Craig Kreman serves as the QAM for this project. The QAM provides quality management support to the PM. The QAM responsibilities include:

1. Creates and approves the Quality Assurance Project Plans (QTEO's QAPP and the CQAP), and the Sampling and Analysis Plan (SAP).
2. Reviews program level quality work instructions and procedures.
3. Identifies quality assurance, testing, and equipment commissioning requirements.
4. Monitors the scope, quality and completeness of project reviews and deliverables.
5. Guides the QC process by serving as a technical resource and counselor to the PM.
6. Monitors and manages the flow of data throughout the project.
7. Creates and maintains the project database which will contain project analytical data.
8. Acts as project liaison to the analytical laboratories to address any technical chemistry issues or problems encountered by the laboratories or by data reviewers.
9. Performs or oversees the validation of all analytical data obtained and assesses its usability in achieving project DQOs and supporting project decisions.
10. Oversees submittals.

Senior Project Engineer (ECCI)
Mr. Trip Gentry serves as the Senior Project Engineer for this project. The Senior Project Engineer functions as the primary consultant with the QTEO and is responsible for meeting all technical, financial, and scheduling goals. The Senior Project Engineer will assist the PM with project management responsibilities as they are given. Additionally, the Senior Project Engineer will serve as a point of contact for technical issues on various project subtasks.

Construction Manager (CM)
Mr. Chris Roper serves as the CM for this project and is responsible for the overall planning, directing, controlling, and coordination of the construction team members during the construction process. The CM is responsible for assuring that the project goals are attained. Areas in which the CM controls the quality of work include, but are not limited to the following:

1. Works in conjunction with estimating staff during the initial phases of the project to ensure that subcontracts and purchase orders are issued in conformance with the grant documents and that the procurement is timely in regard to meeting the project schedule.
2. Establishes administrative procedures during the mobilization phase to ensure proper documentation methods, establish paper flow sequences and chain of command.
3. Coordinates efforts to develop a site layout plan addressing accessibility, traffic patterns, temporary utilities, signage and material storage.
4. Establishes and maintains methods of good communication and relationships with stakeholders and on-site personnel.
5. Schedules periodic inspections with Subcontractors, Suppliers and tribal personnel to ensure compliance with the grant documents and project specifications.
6. Oversees management of on-site personnel and subcontractors.

Site Superintendent
Mr. Brent Durham serves as the Superintendent for this project and is responsible for the planning, directing, controlling, and coordinating of field operations on the project. The Superintendent will ensure that the highest quality of workmanship is a standard among field crews. Areas in which the Superintendent controls the quality of work include, but are not limited to the following:

1. Conducts routine inspections of all work to ensure quality standards are met in compliance with specifications.
2. Schedules and conducts preconstruction conferences prior to the start of critical activities.
3. Maintains information to be included in the project record documents.
4. Ensures that material is received, checked, and properly stored prior to installation.
5. Ensures that the project is kept clean.

6. Ensures on-site compliance with the tribe's safety program.
7. Establishes and maintains line and grade control for the project.
8. Identifies and corrects deficiencies prior to final completion of the project.

5.0 SPECIAL TRAINING / CERTIFICATIONS

Project team members have been chosen with the necessary experience and technical skills to perform required project tasks. The only additional training required is a mandatory review of the project specific HSP. All field staff for the site, including subcontractors, must meet the requirements specified in the Work Plan and the HSP.

6.0 ACCIDENT PREVENTION PROGRAM

One of the primary responsibilities as the Construction Manager is to ensure a comprehensive safety program for each Project.

The Quapaw Tribe and each Subcontractor shall provide and maintain, within their scope of work, a safe, hazard free workplace for their employees, fellow workers and the general public. All employees shall be constantly aware of their responsibility to work in a safe manner.

The Accident Prevention Program embodies the prevention of accidental injury, occupational illness and property damage, and it ensures the involvement and active participation of all project employees. The safety standards therein set forth only establish minimum standards in certain key areas, are not exclusive or exhaustive of the Subcontractors' project safety requirements and obligations, and do not exempt Subcontractors from their responsibility to maintain overall comprehensive company safety programs.

Subcontractors' individual safety programs for each project, as a minimum, shall incorporate the principles of this Accident Prevention Program (Appendix C). Subcontractors have a contractual obligation to perform their work using safe methods and to comply with their company safety programs, the project documents, Occupational Safety and Health Administration (OSHA) Standards, and all other tribal, federal, state and local codes and regulations.

7.0 CONSTRUCTION ACTIVITIES INSPECTIONS

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

7.1 TASK 1: Site Remediation

The estimated timeline for completing the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization).

Subtasks

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.
2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.
3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.
4. Repair of southern access road and associated water crossings.
5. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities.
6. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.
7. Water management, including collection, containment, and disposal of decontamination water and stream bank stabilization.

8. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.
9. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.
10. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

7.2 TASK 2: Tribal Project Management

The QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of the Catholic 40 project. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 12 months of the 2 year project period; consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

8.0 PROJECT COMMUNICATION AND COORDINATION

QTEO shall be responsible for ensuring compliance of the grant requirements with all tribal employees, contractors and suppliers. Construction Manager will provide meeting arrangements in coordination with QTEO throughout the duration of site construction, prepare meeting agendas and minutes, and preside over these meetings. Construction Manager shall provide meeting minutes to QTEO within 3 work days after the meetings that QTEO attends. The meetings shall include, but are not limited to, a pre-construction meeting, weekly progress meetings, and weekly Quality Control (QC) and Health and Safety (H&S) meetings. Various weekly meetings may be combined into one weekly meeting at the discretion of Construction Manager. The anticipated schedule for meetings will be at the job site trailer on each Tuesday while work is being performed on site. Additional project meetings may be required at the discretion of Construction manager to address any project issues or to review project progress.

8.1 Preconstruction Meeting

Prior to the commencement of any on-site construction work, Construction Manager and Superintendent shall attend a pre-construction meeting at the QTEO office in Quapaw, OK to discuss the following subjects, at minimum:

1. Status of Pre-Construction Submittals.
2. Project schedule.
3. Status of insurance.
4. Daily, weekly and monthly reporting requirements (H&S, QC, Operation, Invoices etc.).
5. Administrative project procedures and progress payments.
6. Sequencing of critical path work items.
7. Approved Schedule of Values (SOV).
8. Project changes and clarification procedures (including RFIs).
9. Use of the site, access, office and storage areas, security, and temporary facilities.
10. Site controls.
11. Major project delivery requirements or other important items and priorities.
12. Project Specific Health and Safety Plan and AHAs.
13. Required employee records.

A Preconstruction meeting is also conducted after subcontract awards or purchase orders, prior to contractors beginning work on-site. Construction Manager will prepare an agenda and chair the meeting. The following format will generally be followed to ensure compliance with quality control requirements.

1. Safety program with respect to on-site operations.
2. Status of contracts and insurance, procedures for RFI and changes in the work, and monthly billings for progress payments.
3. Administrative project procedures: Daily, weekly and monthly reporting requirements.
4. Use of the site, access, office and storage areas, security, and temporary facilities.
5. Required submittals, approvals, testing, and quantities.
6. Project schedule.
7. Specific requirements in technical specification sections.

8. Site controls.

8.2 Pre-Activity Meeting

Pre-Activity meetings will be conducted by the Superintendent with site personnel during the beginning of each major activity of work to confirm that proper material, equipment and methods will be used. This meeting can coincide with the Preparatory Phase Inspection and should cover the following issues:

1. Review safety program and hazard analysis with respect to Subcontractor's operations.
2. Physical inspection of site, materials and equipment.
3. Review materials and equipment for proper submittals, approvals, testing, quantities and conformance to the contract documents.
4. Review major installation and coordination points of the specifications.
5. Review quality control / quality assurance requirements in the specifications.

8.3 Daily Tailgate Meetings

Daily tailgate meetings shall be held each morning. All Subcontractor personnel are required to attend the daily tailgate meetings. The following subjects will be discussed, at a minimum:

1. Review the work location, activities for the day, changes in work assignments, and accomplishments or problems encountered the previous day
2. Review and ensure that all AHAs, QC items, and HSE inspections and other related requirements are completed for the activities for that day, prior to start of work
3. Discuss existing or potential construction or schedule problems including HSE or QC related concerns
4. Pre-Task Safety Planning (Safety task analysis form completed for the work planned for the day).

NOTE: Each employee present should sign Pre-Task Safety form prior to beginning any work onsite

8.4 Progress Meetings

After the start of site work and throughout project execution, Construction Manager shall conduct weekly progress meetings with Subcontractors at a location to be determined. Representatives from each Subcontracting firm shall attend these progress meetings: to include the Project Managers, Site Superintendents, H&S and Site Safety Representatives. These meetings may coincide with Follow-up Phase inspections on DFOW in progress. At a minimum, the following will be reviewed, discussed or resolved at each meeting:

1. Review of the minutes of the previous meeting to include attendees
    a. Review of the schedule, to include:
    b. Review of work progress since last meeting
    c. Work or testing accomplished since last meeting
    d. Identification of problems that impede planned progress
    e. Corrective measures to regain projected schedules

2. Review of the status of submittals
    a. Submittals reviewed and approved since last meeting
    b. Submittals required in the near future

3. Review the work to be accomplished in the next two weeks and documentation required
    a. Inspections required
    b. Testing required
    c. Status of offsite work or testing
    d. Documentation required

4. Discussion of health and safety issues/concerns, such as near-misses and incidents

5. Resolutions to quality issues and corrective actions.

    a. RFI and logs

b. Submittals and Submittal Register updates
c. Waste Tracking Log
d. Change Orders
e. Sampling and Testing
f. Survey data
g. Redline mark-up drawing updates
h. Inspection schedule and documentation

6. Other business relating to the SOW

Meetings conducted will be recorded in Weekly Status Meeting Minutes, prepared by Construction Manager and provided to QTEO.

8.5 Quality Control Meetings
Construction Manager shall conduct QC meetings on site at a location to be determined. QC meetings are to review test results, inspection reports, and other matters relating to the quality of construction. Construction Manager shall request QTEO's attendance at least 5 work days prior to any scheduled special inspection or additional testing.

8.6 Problem or Deficiency Meetings
A special meeting may be held if a problem or deficiency is present or likely to occur including H&S and QC related items. At a minimum, the appropriate QTEO and contractor representative will attend the meeting. The purpose of the meeting will be to define and resolve a problem or recurring work deficiency in the following manner:

- Define and discuss the problem or deficiency
- Review alternative solutions
- Implement a plan to resolve the problem or deficiency

Whenever required, a Corrective Action Plan (CAP) shall be prepared by contractor for review and approval by Construction Manager and/or QTEO for major items or circumstances such as H&S related incidents, quality of workmanship, spills, cross-contamination, re-work, schedule delay, adverse cost impact, personnel issues, etc. Representatives from all parties present during the meeting shall take notes and submit copies of their meeting notes to QTEO immediately after the meeting as noted above.

9.0 DOCUMENTATION AND REPORTING (See Appendices for Forms)

9.1 Project Records
Records that are generated for the project will be readily available for reference, and shall include the following, at minimum:

- Property access agreements
- Reconnaissance data
- Submittals, including Submittal Register
- Daily reports
- Meeting minutes
- Inspection reports—Preparatory Phase, Initial Phase, and Follow-up Phase Grid Diary Inspection Forms
- Punch list inspection results
- Pre-final and final inspection results
- Sampling log
- Test results including testing plan and log (chat characterization, confirmation sampling, storm water, geotechnical)
- Contract and contract modifications
- Construction change order and log
- Red-lined drawings/as-built drawings
- Survey data and maps
- RFIs arranged in numerical order and RFI log
- Certificates and qualifications

- Calibration records (Scale and other test equipment)
- Photographs and photograph log
- Corrective Action Plans

9.2 Daily Report and Daily Contractor Quality Control Report

The daily report is a record of operations on the job site and must be prepared to account for each calendar day over the duration of the project. It is an essential tool for recording and reporting the daily production safety and QC activities of the project. On non-working days, a separate daily report need not be prepared, but the previous and subsequent daily reports must address and account for the non-working days. The reports are the official record of work performance and compliance with project plans, drawings, and specifications. It is therefore critical that the reports are correct and timely.

Daily reports will be prepared for this project to document tasks that are performed each day. The Superintendent is responsible for preparing work summary details. QTEO is responsible for preparing work summary details involving sampling and testing (for further details see QTEO QAPP available under separate cover). The Health and Safety Manager will provide information on the health and safety activities. Other tasks being performed, such as ground water monitoring, will be documented by those assigned individuals in discrete work summary reports. Individual work summary reports will be compiled into the applicable daily reports (for instance, sampling/testing or construction). The daily reports will be submitted to the Construction Manager for review and finalization.

The daily report will include at a minimum, the following:

- Activities performed for the day including quality aspects of the project that are being performed by the subcontractor
- Planned activities including sampling, surveying and inspections
- Scheduling and resource issues/concerns
- Site safety inspections and concerns, inspections conducted and findings/result of inspection
- Environmental concerns
- Project schedule and progress
- QC inspections, inspections conducted and findings/result of inspection
- Tests performed and their results
- Personnel and equipment onsite, including man-hours
- Materials received and inspected
- Tailgate safety meeting minutes and signatures
- Changed conditions, delays, or conflicts encountered including QC issues
- Submittal Status
- Waste disposal summary

The project team must review the daily reports for accuracy and completeness because these reports are used to prepare the final reports for the project. QTEO will review these reports to ensure the quality processes and systems are working on the project.

9.3Photos and Photo Logs

Photographic records will be made and kept as part of the QA records. In addition to recording construction progress and as-built installation details, the photographic record will be used to document pre-existing conditions at the site and any deviations from design and nonconforming items or work. Each photograph will be assigned with an identification number, date, location, and description. Any of the observers may photograph work for record purposes. The photographer will prepare the photograph log and send it with the corresponding photographs to the Construction Manager for archiving. The Superintendent will archive and maintain the photographic record file using a digital camera that includes a date and time stamp to document when each photograph was taken.

NOTE: Health and Safety related documentation shall be included in the HSP. Testing and Sampling documentation is provided with QTEO's QAPP.

9.4 Conversation Record

Use this form to document verbal conversations with project stakeholders: Federal, State, or local agencies, etc.

during the course of the Remedial Action.

9.5 Grid Diary Inspection Form

To provide accurate documentation of grid diary inspections during grid remediation within the designated area where TZ soil needs to be excavated to the required depths, a grid diary inspection form or its equivalent will be used.

The grid diary inspection form includes four types of hold-point inspections:

A. Type A—Used before collection of confirmation sample starts for each grid to document the inspection conducted in the excavated/remediated area to verify that all source material has been removed in accordance with the SOW.

B. Type B—Used after the required horizontal and vertical excavation limits have been completed in each grid. Documents that the grid is ready for post-excavation survey verification to ensure that both parties have collected their post-excavation survey information and have verified that that the required excavation depth has been met.

C. Type C—Used before final grading starts to ensure that all survey data has been collected, all other tasks prior to site restoration have been completed and that all issues have been resolved.

D. Type D—Other: Used for any special cases not covered above. In any instance during TZ soil removal, where a special case is encountered in the field as outlined below, Type D will be used.
   1) Case 1—Grids that are designated "no dig" and visible source material is observed.
   2) Case 2—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and that are too wet to be excavated to the required depths.
   3) Case 3—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and veins of source material are encountered that may potentially extend beyond the required excavation depths/limits.
   4) Case 4—Grids that are designated "excavate 6 inches" or "excavate 12 inches" and a rocky material or boulder (not source material) is encountered.
   5) Case 5—Grids that are designated "excavate 6 inches" or "excavate 12 inches" or "no dig" or where another special case is encountered that may necessitate deviation from the excavation tolerance of ±0.1 foot, as approved.

10.0 DOCUMENT CONTROL

10.1 Current Document Log and Drawing Log

The Superintendent shall ensure that the field force including Subcontractor field personnel, are using current documents. During the progress of the job, revisions may occur which require the issuing of revised drawings (As-Built/Red Line drawings) as clarifications or proposed changes. Once approval has been given and QTEO has directed work to proceed, the Construction Manager will update the Current Document Log or Drawing log. The Superintendent shall ensure that all field personnel are using current contract documents. The Construction Manager will assist the Superintendent in implementing the procedures for periodic verification.

10.2 Submittal Control

QTEO's Quality Assurance Manager (QAM) will ensure that the strict procedures that have been established are followed in managing submittals of drawings, brochures, manufacturers' catalogs and in management of samples and test data. All submittals will be checked by QTEO's staff for conformance to the project specifications.

The QC Manager will manage the logging and tracking of all submittals in the Submittal Register. Specific responsibilities regarding submittals include the following actions:

- Coordinating all submittal actions
- Maintaining necessary submittal records in an organized fashion
- Maintaining and tracking submittals in the Submittal Register
- Reviewing and certifying all submittals for compliance with the project plans, drawings, and specifications
- Approving all submittals except those designated to be approved by the QTEO Director / Project Manager, EPA site representative, and/or stakeholders

- Checking all material and equipment delivered to the project for compliance with the project plans, drawings, and specifications

The QTEO, or designee, is responsible for ensuring that all entities involved with the Remedial Action present their submittals in a timely manner to ensure the project schedule can proceed without any adverse impact. Critical submittals and long lead-time materials must be identified as separate activities on the schedule. The QTEO, or designee, will ensure that the submittal packages are complete so that valuable time is not wasted and effort lost on a resubmittal. Submittal status will be an agenda item of the weekly status meetings. If a submittal requires the EPA's approval, it should be clearly indicated in the submittal.

10.3 Materials and Equipment Control

It is the responsibility of the Superintendent to ensure that all equipment and material is stored in accordance with manufacturer's recommended procedures and/ or the specifications. All equipment and material will be properly handled and transported to prevent damage. Special handling instructions provided by the supplier will be carefully followed. It is the responsibility of the QAM to conduct periodic inspections of equipment and material in storage. The QAM will advise the Construction Manager and Superintendent of any items that are not properly stored. It shall be the responsibility of the Superintendent to ensure that any improper storage is corrected.

11.0 TESTING AND SAMPLING

QTEO shall be directly responsible for all soil testing and sampling.

11.1 Sampling and Testing Log

Sampling and testing will be performed to verify that control measures are adequate to provide a product that conforms to project plans, specifications, and drawings. The sampling and testing log will be populated to log the sampling and testing conducted. Offsite testing will be performed by laboratories and testing companies with accreditation and certifications through industry recognized organizations and standards. Onsite testing (*e.g.*, use of XRF equipment) will be performed by individuals qualified to perform the testing as determined by their supervisor and accepted by the QTEO.

11.2 Testing Companies

Testing services will be compliant with the project requirements and specifications prepared by the QTEO. The project plans will specify specific analytical and geotechnical testing methods (*e.g.*, American Society for Testing and Materials [ASTM] or similar standards), professional services, and other measurement protocols as specified in the project plans, designs, and specifications. The SOW will also specify the nature of the report or deliverable required of the testing laboratory, including requirements for professional certification. Scheduling of site services will be the responsibility of the QTEO or its designee.

The following activities will be performed and documented during testing:

- Verify that testing procedures comply with plan-specific requirements.
- Verify that facilities and testing equipment are available and comply with testing standards.
- Check test instrument calibration data against traceable certified standards.
- Verify that recording forms and the test identification system, including all test documentation requirements, have been prepared.
- Record results of all tests, both passing and failing tests, on the daily report for the date taken. Give section reference, location where tests were taken, and the sequential control number identifying the test. Actual test reports may be submitted later with a reference to the test number and the date taken.

The test results must be signed by the testing laboratory's representative authorized to sign certified test results. The signed reports, certifications, and other documentation will be submitted to EPA as part of the Final Remedial Action Report.

See QTEO's Quality Assurance Project Plan, submitted under a separate cover, for further details.

12.0 NONCOMPLIANCE AND CORRECTIVE ACTION

12.1 Resolution of Conflicts

The QTEO will notify the appropriate entity of any detected noncompliance with the foregoing requirements. A less formal communication (verbal or e-mail) of the deficiency is made first. Then, if corrective action is not put in place, formalized notice in the form of a noncompliance report is initiated by the QTEO or its designee and sent to the appropriate entity. Follow-up will occur and if not acceptable the QTEO will issue a notice to cure.

12.2 Corrective Measure Plan

The entity will take immediate corrective action after receipt of such notice. Such notice, when delivered to the entity at the work site, will be deemed sufficient notification. If the entity fails or refuses to comply promptly, the QTEO may issue an order stopping all or part of the work until satisfactory corrective action has been taken as outlined in the terms and conditions of the work requirements. The project team will monitor and inspect the remedial activity to ensure that materials, equipment, and work performed that do not conform to project requirements are identified and controlled to prevent unintended use or delivery. Through planning and the involvement of the quality team and other functional groups early in that planning process, actions can be taken to prevent potential noncompliance from occurring during project execution. Noncompliance notification or stop work orders will be documented in the daily report and a nonconformance/deficiency report. Completion of corrective action will be noted on the daily report and finalized nonconformance/deficiency reports. Verification of the corrective action and its results will be performed by the QTEO and documented in the daily report.

13.0 CONSTRUCTION QUALITY PLAN

13.1 Construction Quality Plan Objective

This Construction Quality Plan (CQP) provided in this CQAP for the Tar Creek OU 4 Source Material Remedial Action project for CB 011 (Catholic 40) presents the construction quality management process that will be implemented on the project. "Three Phases of Control" (3POC) intended through application of the protocol is enhanced quality and corresponding documentation of the quality process for each "definable feature of work" (DFOW) for the project. A DFOW is a task that is separate and distinct from other tasks and has separate control requirements.

13.2 Project Performance Objective

The project objectives for the Distal Area Remedy are defined in the Project Work Plan.

13.3 Three-Phases of Control (Preparatory, Initial, and Follow-up)

Construction Manager shall conduct Preparatory, Initial, and Follow-up Inspections (see Appendix B for form) prior to beginning each Definable Feature of Work subtask 2 through 10 under Task 1 – Site Remediation, and shall include a review of project work plan and specifications to ensure that planned work complies with the SOW:

1. Review safety measures and hazard analysis.

2. Review overall site conditions.

3. Review materials and equipment.

4. Review quality of workmanship.

NOTE: A Preparatory Phase inspection shall not be conducted until all items required to initiate the particular subtask have been completed.

Initial inspections shall be performed as soon as all the identified outstanding items during the preparatory meeting have been addressed and just as work begins and shall be used to examine the quality of workmanship as well as quality control testing/surveying for compliance with the specifications.

Completion of the Initial Phase of QC activity then leads directly into the Follow-Up Phase, which addresses the routine day-to-day activities on the project site. Inspection activities associated with each DFOW are to be addressed within the daily report. Specific concerns associated with the follow-up phase include the following:

1. Inspection of the work activity to assure work is in compliance with the contracted project tasks

2. Evaluation and confirmation that the quality of workmanship is being maintained at a level no less than that established during the initial phase

3. Evaluation and confirmation that required testing and surveying are being performed in accordance with procedures established during the Preparatory Phase and confirmed during the Initial Phase

4. Confirmation that non-conforming work is being corrected promptly and in accordance with the direction provided by the QAM.

Outstanding action items identified during inspections shall be corrected within seven (7) calendar days of the inspection. Documentation is required for each phase of the subtask's preparatory, initial and follow-ups. Construction Manager shall notify QTEO at least 2 work days prior to these scheduled inspections.

13.4 Critical Inspections

13.4.1 Grid Diary Inspections

Once the crews have completed the excavation of the specified grids to the required horizontal and vertical limits, the superintendent shall inform QTEO in writing, using the Grid Diary Hold-Point Inspection form attached to this plan within Appendix B. The site superintendent shall conduct its own QC survey check of the horizontal and vertical limits of the excavation of those grids. QTEO or its subcontracted surveyor will then conduct a topographic survey of the post-excavation surface of the TZ soils to verify proper excavation depth. Should there be discrepancies between the site superintendent survey data and QTEO's third party surveyor regarding validation of elevations, areas, volumes, lengths or other survey-related items, the QTEO's third party surveyor data shall be used to verify the limits of excavation (and be the basis for compensation).

In any instance during TZ soil removal where a special case situation is encountered in the field, as outlined below, the Grid Diary Inspection Form shall be used to document the situation.

Case 1. Grids that are designated "no dig" and visible source material is observed.

Case 2. Grids that are designated for excavation but are too wet to be able to reasonably control excavation depth (i.e. previously a pond with fully saturated soils).

Case 3. Grids that are designated for excavation and veins of source material are encountered that may potentially extend beyond the required excavation depths/limits.

Case 4. Grids that are designated for excavation and a rocky material or boulder (not source material) is encountered, and removal of the rocks or boulders would result in excavation depth greater than required.

Case 5. Grids that are designated for excavation and another unspecified special case is encountered that may necessitate deviation from the excavation tolerance of ±0.1 ft as approved by QTEO.

NOTE: Wet conditions resulting from failure of the Contractor to remove or properly control storm water shall not be sufficient justification for a Grid Inspection Form notification.

13.4.2 Punch List Inspections, Pre-Final and Final Inspections

Prior to commencing the Site Restoration activities, QTEO will advise which grids and/or areas will be released for restoration. Completion of all site activities (i.e. plugging of cased borings, backfilling of mineshafts, confirmation surveying, etc.) will be required prior to initiation of the restoration activities. Updated project logs containing information on the summary of information shall be submitted to QTEO. Survey verification data demonstrating that the site crews have performed its QC check of the restored areas meeting the requirements shall be submitted to QTEO within 2 working days of the survey. Should there be an issue or inconsistency with survey data regarding validation of elevations, areas, volumes, lengths or other survey-related items, the third party surveyor data shall be used. QTEO will inform the site crews in writing what grids or areas are ready for site restoration.

Prior to demobilization from the site, QTEO will perform a final inspection and any deficiencies will be corrected prior to demobilization. Following the completion of the pre-final punch-list items, QTEO will schedule a pre-final site inspection with EPA. Documentation demonstrating that all outstanding items have been closed/ addressed/corrected shall be submitted to QTEO (e.g., signed and dated punch list items summary, pre-final and final inspection forms). All punch list items need to be addressed/corrected prior to final demobilization.

13.4.3 SWPPP Inspections
For details on SWPPP inspections, see Project SWPP provided under separate cover.

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Plan Revision History
Plan Version / Revision Date / Revision Reason
Version 1.0 09/01/2013 Plan drafted
Version 1.1 11/20/2013 Plan approved / implemented

Appendix A

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Drawing Log
Document Log
Daily Report and Daily Contractor Quality Control Report
RFI Form
RFI Tracking Log
Submittal Transmittal
Submittal Register
Waste Tracking Log
Photo – Video Log
Conversation Record

[See Attached]

DRAWING LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Drawing #	Drawing Date	Date Initiated	Rec by	Submitted by	Replaces Drawing #	Description of drawing	Description of Change
Sheet No 001 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Cover Sheet	CJW No 1379
Sheet No 002 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Typical Sections	
Sheet No 003 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Plan & Profile	
Sheet No 004 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Plan & Profile	
Sheet No 005 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Culvert plan & profile	
Sheet No 006 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Culvert plan & profile	
Sheet No 007 of 07	10/10/2013	10/14/2013	TLB	CJW	initial	Temp erosion control	
Sheet No 001 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Cover Sheet	CJW No 1379
Sheet No 002 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Typical Sections	
Sheet No 003 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Plan & Profile	
Sheet No 004 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Plan & Profile	
Sheet No 005 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Culvert plan & profile	
Sheet No 006 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Culvert plan & profile	
Sheet No 007 of 07	10/15/2013	10/18/2013	TLB	CJW	same doc 10/10	Temp erosion control	updated North Arrow on Sheet 7

DRAWING LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Drawing #	Drawing Date	Date Initiated	Rec by	Submitted by	Replaces Drawing #	Description of drawing	Description of Change

Page _____ of _____

DOCUMENT LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: Catholic 40

PROJECT NAME: _____ SITE LOCATION: _____

Doc #	Doc Date	Date Initiated	Rec by	Submitted by	Replaces Doc #	Description of document	Description of Change

Page _____ of _____

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

CONTRACT NAME:				REPORT NO:			
CONTRACT NUMBER:				REPORT DATE:			
TASK ORDER NUMBER:				REVISION DATE:		REV #	
PROJECT NAME:				SITE NAME/DISTAL GROUP:			
PROJECT NUMBER:				PROJECT DESCRIPTION:			
PROJECT MANAGER:				FIELD QUALITY MANAGER:			
CONSTRUCTION MANGER:				H&S SAFETY MANAGER:			
AM WEATHER:		PM WEATHER:		MAX TEMP (F):		MIN TEMP (F):	

SUMMARY OF WORK PERFORMED (by work area)

HEALTH AND SAFETY

JOB SAFETY	Was a Job Safety Meeting held this date?	YES	NO
	Were there any lost-time accidents this date? (If yes, attach a copy of completed OSHA report)	YES	NO
	Was a Confined Space Entry Permit administered this date:	YES	NO
	Was Crane/Manlift/Trenching/Scaffold/HV Elec/High Work/Hazmat work done?	YES	NO
	(If yes, attach statement or checklist shwoing inspection performed)		
	Was Hazardous Material/Waste released into the environment?	YES	NO
	(If yes, attach description of incident and proposed action)		

SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED (Include Observations, Safety Violations, Correction Instructions Given, Corrective Actions Taken, and Results of Safety Inspections Conducted:

TAILGATE TOPICS:

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

SAFE BEHAVIOR OBSERVATIONS:

OPERATIONS / PRODUCTION REPORT

CONFIRMATION OF PROPERTY ACCESS

Are access agreements on file at the job site? (Y / N)

Have access agreements been reviewed to confirm they apply to the property where work is being performed? (Y / N)

Are property lines adequately marked to prevent unauthorized access? (Y / N)

WORK FORCE - CONTRACTOR AND SUBCONTRACTOR

Company	Total Hours Today

EQUIPMENT ON HAND (Initial Inspection conducted to check if the Equipment is clean and in good working order/operable)

Description of Equipment	Make/Model/Manufacture	Equipment ID Number	Inspection Performed by

EQUIPMENT COMMENTS (acceptance status, inspection findings, etc.):

PLANNED WORK

Planned Work / Test for tomorrow:

Planned Work / Test for next week:

DAILY REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

CHANGED CONDITIONS / DELAY / CONFLICTS ENCOUNTERED

(List any conflicts with the project [i.e. scope of work and/or drawings], delays to the project attributable to site and weather conditions, etc.)

VISITORS AND DISCUSSIONS:

REGULATORY COMPLIANCE REPORT

PERMIT INSPECTIONS PERFORMED:

WASTE ACCUMULATION/STOCKPILE AREA INSPECTION

Inspection performed by: **Signature of Inspector:**

Accumulation / Stockpile Area Inspected:	See Waste Tracking Log						
No of Containers:	N/A	**No of tanks:**	N/A	**No of Roll-off Boxes:**	N/A	**No of Drums:**	N/A

Inspection Results:

GENERAL COMMENTS

General Comments (rework, directives, etc.):

DAILY CONTRACTOR
QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DEFINABLE FEATURES OF WORK STATUS

DFOW No.	Definable Feature of Work	Preparatory	Initial	Follow-up
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐
		❐	❐	❐

PREPARATORY

Was preparatory phase work performed today? YES NO

If yes, fill out and attach supplemental Preparatory Phase Checklist.

DFOW No.	Description	Preparatory Phase Report No. 02

INITIAL AND FOLLOW-UP FEATURE OF WORK COMMENTS

DFOW No.	Phase		Comment / Finding / Action
	Initial	Follow-up	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	
	❐	❐	

DAILY CONTRACTOR
QUALITY CONTROL REPORT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

REWORK ITEMS

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)			**REWORK ITEMS CORRECTED TODAY** (FROM REWORK ITEMS LIST)	
TASK / ACTIVITY	DATE ISSUED	DESCRIPTION	TASK / ACTIVITY	CORRECTIVE ACTION(S) TAKEN

SAMPLING / TESTING PERFORMED:

TASK/ACTIVITY TESTED	SAMPLING/TEST PERFORMED	TEST RESULTS (PASS / FAIL CRITERIA)

MATERIALS / EQUIPMENT INSPECTION (Materials received and inspected against specifications)

DESCRIPTION/QUANTITY/VOLUME/WEIGHT	MAKE/MODEL/MFG	MATERIAL LOT #	INSPECTION PERFORMED BY

SUBMITTALS INSPECTION / REVIEW:

SUBMITTAL NO	SUBMITTAL DESCRIPTION	SPEC/PLAN REFERENCE	SUBMITTAL APPROVED?	COMMENT/REASON/ACTION
			YES NO	
			YES NO	
			YES NO	
			YES NO	

LIST OF ATTACHMENTS (examples, as applicable: preparatory phase checklist, QC meeting minutes, safety meeting minutes, crane inspections crane operation checklist, COCs, weight tickets, manifests, profiles, rework item list, testing plan and log, etc.):

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

PREPARER'S SIGNATURE DATE

REQUEST FOR INFORMATION

RFI No: _____

Date: _____

PROJECT INFORMATION and REFERENCES

CONTRACT No. _____ Document: _____

PROJECT NAME: _____ Drawing / Plan: _____

SITE NAME: _____ Detail / Section: _____

SITE LOCATION: _____

CONTRACTOR: _____

REQUEST FOR INFORMATION DESCRIPTION

Description of existing condition and/or deficiency:

Recommended solution:

Clarification requested by: _____

Clarification requested of: _____

POTENTIAL IMPACT

Cost impact: Yes / No Schedule impact: Yes / No

Activity Impacted: _____

Work days impacted: _____ Estimated cost impact: $ _____

REQUESTOR INFORMATION

Requested by: _____

(Printed Name) (Title)

_____

(Signature) (Date)

RESPONSE DISPOSITION / CONCURRENCE

Response Disposition / Concurrence:

Further action required (if any):

Response provided by: _____

(Printed Name) (Title)

_____

(Signature) (Date)

REQUEST FOR INFORMATION LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

RFI #	Status	Date Initiated	Date Resolved	Prepared by	Submitted to	Description of Issue	Description of Disposition/Concurrence
1							
2							
3							
4							
5							

SUBMITTAL
TRANSMITTAL

Project: _____ **Date:** _____
Owner: _____ **A/E Project No:** _____
Submittal No: _____ **Resubmission Date (if applicable):** _____

TRANSMITTAL To (Construction Manager): _____ Date: _____
A From (Subontractor / vendor): _____

Qty / Pages	Reference / Number	Title / Description / Manufacturer	Spec. Section Title and Paragraph Drawing Detail Reference

- ❒ Submitted for review and approval
- ❒ Resubmitted for review and approval
- ❒ Complies with contract requirements
- ❒ Will be available to meet construction sche
- ❒ A/E review time included in construction schedule
- ❒ Substitution involved - request attached
- ❒ If Substitution involved, submission includes point-by-point comparative data or prelim details
- ❒ Items included in submission will be ordered immediately upon receipt of approval

Other remarks on above submission: _____

TRANSMITTAL To (EPA): _____ Date: _____
B From (QTEO): _____ By: _____

- ❒ APPROVED
- ❒ REJECTED
- ❒ FURNISH AS CORRECTED
- ❒ REVISE AND RESUBMIT
- ❒ SUBMIT SPECIFIED ITEM

Reviewed by (EPA): _____
Other remarks on above submission: _____

TRANSMITTAL To (A/E): _____ Date: _____
C From (CM or PM QTEO): _____ By: _____

- ❒ APPROVED
- ❒ REJECTED
- ❒ FURNISH AS CORRECTED
- ❒ REVISE AND RESUBMIT
- ❒ SUBMIT SPECIFIED ITEM

Reviewed by (A/E): _____
Other remarks on above submission: _____

TRANSMITTAL To (Subcontractor): _____ Date: _____
D From (Construction Manager): _____ By: _____

Submittal Register

Project Submittal #	Contractor	Contractor's Number	Subcontractor	Sub's number	Submittal date	Description	Pages	Date received	Date forwarded to QTEO	Date forwarded to Engineer	Date forwarded to EPA	Date approved by QTEO	Rejected	Date approved by Engineer	Date approved by EPA	Rejected	Received approval	Notified Contractor	Comments

Waste Tracking Log

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

, PROJECT NAME: _____ SITE LOCATION: _____

Container Type	Container Designation	Load ID	Contractor	Transportor	Transportor EPA ID	Date Transported	Disposal Facility	Disposal Facility EPA ID	Media	Waste Type (Haz, Nonhaz)	Waste Code / Haz Waste No	Disposal Date	Manifest #	Incineration	Recycle	Landfill	Other	Units	Certificate of Disp/ Destruction Date	Comments/Notes	File status
																		tons			

PHOTO - VIDEO LOG

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

PHOTO #	Date	Time	Description	View Direction	Taken By
1					
2					
3					
4					
5					

CONVERSATION RECORD

CONVERSATION WITH: _____

MEETING LOCATION OR

PHONE NUMBER: _____

DATE: _____ TIME: _____

CONVERSATION INITIATED BY: _____

CONVERSATION NOTES BY: _____

SUBJECT: _____

PARCEL ID : _____ (use table below if more detail is needed)

CHAT OR FT FEATURE IDS: _____

PROJECT NUMBER: _____

PARCEL ID	Chat pile	Chat base	Fine tail	Distal

DESCRIPTION OF CONVERSATION:

Appendix B

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Grid Diary Hold-Point Inspection
Three-Phase Inspections (Preparatory, Initial, Follow-up) Form

[See Attached]

GRID DIARY HOLD-POINT INSPECTION

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

Type A-Used before collection of confirmation sample starts for each grid to document the inspection conducted in the excavated/remediated area to verify that all source material has been removed in accordance with the SOW.

Type B-Used after the required horizontal and vertical excavation limits have been completed in each grid. Documents that the grid is ready for post-excavation survey verfication to ensure that both parties have commected their post-excavation survey information and have verified that the required excavation depth has been met.

Type C-Used before final grading starts to ensure that all survey data has been collected, all other tasks prior to site restoration have been completed and that all issues have been resolved.

Type D-Other: Used for any special cases not covered above. In any instance during TZ soil removal, where a special case is encountered in the field as outlined below, Type D will be used.

Date of Inspection: _____

Inspection #: _____

Type of Inspection: A B C D (CIRCLE ONE)

Details if Type D inspection:

Location Description:

(Provide dimensions as applicable (length, width, depth, diameter, circumference, distance, etc))

Inspection Notes:

(Include estimated quantities as applicable)

Correction Action Item Description	Assigned to	Due date

Attendees: Printed Name and Initials

Attachment A: Map of area inspected

Attachment B: Photograph of area inspected (for Type D inspection)

Note: Inspection # should be included in daily report. All parties should have an initialed copy of the completed inspection form.

THREE - PHASE INSPECTIONS (Preparatory, Intial, Follow-up)

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

Type 1—PREPARATORY PHASE

Type 2 - INITIAL PHASE

Type 3 - FOLLOW-UP PHASE

Date of Inspection: _____

Inspection #: _____

Type of Inspection: _____
(PREP, INITIAL, FOLLOW UP)

Definable Feature of Work involved in inspection: _____

PREPARATORY PHASE

Submittals for DFOW have been approved: Y N If not, what submital is missing? _____

All materials are on hand: Y N If not, what material is missing? _____

Are materials stored properly? Y N If not, what corrective action was taken? _____

All required permits are on file: Y N If not, what permit is missing? _____

Review Specifications. Discuss procedures for accomplishing task. Clarify Differences.

Inspection Notes:

INITIAL PHASE

Discuss standards of workmanship required to properly deliver the DFOW subtask in accordance with project requirements.

Establish chain of command in case of conflicts.

Confirm testing procedures, which tests will be performed, frequency, and by whom.

Activity Hazard Analyisis has been completed? Y N (**Note:** If not, complete AHA at this time.)

Inspection Notes:

THREE - PHASE INSPECTIONS (Preparatory, Intial, Follow-up)

PROJECT INFORMATION

CONTRACT No. _____ SITE NAME: _____

PROJECT NAME: _____ SITE LOCATION: _____

INSPECTION

FOLLOW-UP PHASE

Work is in compliance with project tasks: Y N If not, what corrective action was taken? _____

Quality of workmanship is being maintained: Y N If not, what corrective action was taken? _____

Testing and surveying are being performed in accordance with established procedures: Y N

If not, what corrective action was taken? _____

Inspection Notes:

Specific tasks assigned	Assigned To	Due Date

Attendess: Printed Name and Initials

Note: Inspection # should be included in daily report. All parties should have an initialed copy of the completed inspection form.

Appendix C

QUAPAW TRIBE ENVIRONMENTAL OFFICE

Accident Prevention Program, QSA

[See Attached]

ACCIDENT PREVENTION PROGRAM

Quapaw Services Authority

Responsibility
Management and Employees will establish and maintain a safe and healthful working environment by following the programs and procedures in this Accident Prevention Program.

Employee Participation
Employee involvement in preventing workplace injuries and illnesses is critical. To ensure employee participation a monthly Safety and Health meeting will be established at project locations. The purpose of the Safety and Health meeting is to bring employees and management together to promote safety and health.

Department Monthly Safety and Health Meetings

Safety and health meetings can be held as part of regularly scheduled staff meetings.

Safety and health meetings will be conducted during the first week of every month.

Safety and Health Meeting agenda items for possible discussion include:

- Job assignments and potential hazards.
- Review of safe work practices.
- New equipment and work practices and related safety and health hazards.
- Employee safety and health concerns.
- Observed hazardous conditions/practices and recommended corrective actions.
- Safety and health inspection results.
- Accident investigation review.
- Accident Prevention Program review.

Monthly Safety and Health Meetings are documented. The minutes are retained by the department for one year.

Notices and Safety Posters

Notices required by law and posters to enhance workplace safety will be located in every project trailer. Employees should check their areas regularly for new notices.

The following posters and information are displayed on the safety bulletin board:

- OSHA 3165 – Job Safety and Health: It's the law!
- Emergency Telephone Numbers
- OSHA 300 Log Summary of Injuries and Illnesses (Posted for the months of February- April).

Hazard Notification

Employees observing a potential safety and health concern are to contact their Superintendent immediately. A Hazard Observation Form should be completed and submitted to the Project Manager as soon as possible following the event. The Project Manager will develop and implement corrective action.

Safety and Health Inspections

QSA is committed to identify and promptly control hazardous conditions and practices that are likely to result in injury or occupational illness to employees. Daily and monthly inspections are performed to proactively identify potential hazards.

Once a hazard is identified, control procedures are developed and implemented as described in the Hazard Controls section below. The daily and monthly inspections ensure a safe and healthy work environment is established and maintained.

DAILY INSPECTIONS

The Daily Safety Inspection Checklist should be reviewed each morning prior to the commencement of construction activities. In addition, prior to using any tools and equipment, a brief visual inspection is conducted according to the manufacturer's specifications to determine if there are any obvious defects. Defective tools and equipment will be removed from service.

MONTHLY INSPECTIONS

A monthly safety and health inspection of all processes, tools, equipment and facilities is coordinated by QSA's Construction Manager.

Inspection results and corrective action shall be documented. The completed checklist is retained for one year.

Deficient inspection items that cannot be corrected during or immediately after, the inspection are to be brought to the Project Manager's attention so that he/she is able to develop a strategy for corrective action.

Hazard Controls

Conditions and practices creating an imminent and serious hazard will be immediately controlled and brought to the Superintendent's attention. *Employees will not remain exposed to a serious hazard.* Serious hazards that cannot be corrected immediately are to be brought to the Project Manager's attention. The Project Manger will develop a strategy for corrective action.

Minor safety and health deficiencies identified either during the course of work or through an inspection will be corrected as-soon-as-possible.

Hazardous conditions and practices are to be controlled through the use of engineering controls when technologically and economically feasible. Engineering controls are passive measures

designed to prevent contact with a hazard. Examples of engineering controls include installing barriers, enclosing hazards, and using local ventilation.

When engineering controls are not feasible, timely, or do not completely eliminate the hazard, personal protective equipment must be used.

Personal Protective Equipment (PPE)

HAZARD ASSESSMENTS

Assessments are conducted for all activities to determine if hazards are present necessitating the use of PPE. The Superintendent will ensure that hazard assessments have been conducted. Hazard assessments are to be documented and retained using the Activity Hazard Analysis form.

A hazard re-assessment will be conducted whenever new equipment or processes are introduced or an investigation of an injury or illness indicates the need for personal protective equipment.

TRAINING

If PPE is required as determined by the hazard assessment, the Superintendent will ensure employees are trained on how to use the assigned PPE.

Training and information to be provided to each employee includes:

- Why, when and what PPE is necessary
- How to properly put on, take off, adjust, and wear the PPE
- Selection criteria & limitations of PPE
- Proper care, inspection, maintenance, useful life and disposal of the PPE

Each employee will demonstrate an understanding of this training before being allowed to perform work requiring the use of PPE. Methods of demonstrating this understanding include orally questioning the employee, observing the employee using PPE in a real or artificial setting, or administrating a written test.

HEARING CONSERVATION

Employees using high-speed tools and mechanized equipment and/or operating heavy mobile equipment may be required to wear hearing protection. As a general guide, if a person has to shout to be clearly heard from two feet away, hearing protection should be used.

RESPIRATORY PROTECTION

Employees performing activities creating dusts, mists, fumes and vapors may be required to wear respiratory protection.

Accident Reporting

Supervisors and employees are to immediately report *major* injury accidents to the Construction Manager. Major accidents are those events that result in death, serious injury (e.g., fracture, amputation) or in-patient hospitalization. The site of a major injury accident is to be secured and preserved.

Employees are to promptly report occupational injuries and illnesses and near misses to their Superintendent.

Accident Investigation
The investigation of accidents and near misses is an essential part of the Accident Prevention Program. A thorough investigation identifies unsafe acts and conditions requiring corrective action. An accident investigation and subsequent corrective action minimizes the potential for future accidents.

The Superintendent and Project Manager should immediately investigate and complete an Accident Investigation Report when:

- An employee involved in a minor occupational accident is unable to work the subsequent full shift(s) due to a resulting injury or illness, or
- The employee receives medical treatment, or
- Events and conditions involving a near miss or non-injury accident indicate there was a high probability of serious injury, illness or significant property damage.

After the cause(s) of the accident is determined, the Superintendent initiates corrective action or provides recommendations for corrective action to the Project Manager.

Witnesses and injured persons may complete a Witness/Injured Person Statement.

Emergency Action Plan

The following Emergency Action Plan establishes administrative and employee actions for reporting emergencies, building evacuations, administering first-aid, fire planning and hazardous materials spills.

REPORTING EMERGENCIES *(ALSO SEE* ***PROJECT SPECIFIC HEALTH AND SAFETY PLAN)***

Department/Emergency	Call
Fire	911
Police	911
Emergency Medical Services	911
Serious Injuries and Illnesses	911
Hazardous Materials Spills	911

EVACUATION
Employees are to evacuate buildings and meet at an assigned gathering location at each project location, upon activation of emergency alarms. An evacuation map for complex structures shall be posted at those project locations. An evacuation map shall show location of exits, fire extinguishers, first-aid kits, emergency eyewashes and showers and the gathering location outside.

FIRST-AID/CPR
Sufficient numbers of employees are trained in first-aid/CPR to assure at least one person is always available to provide quick and effective first aid to all employees. Employees designated to provide first-aid as listed in their position description are covered by the company's Bloodborne Pathogens Exposure Control Plan.

A list of current first-aid and CPR certified employees shall be posted at project locations along with the expiration dates of their cards.

First-aid kits and supplies are available from Central Stores. First-aid kits are re-stocked whenever an item is used. First-aid kits are to be checked during the annual safety and health inspection.

FIRE PLANNING

Project Managers and Superintendents are to plan how their project staff will respond to a fire emergency. All QSA employees will be designated and trained to fight incipient stage fires (about the size of a wastepaper basket). Employees not engaged in extinguishing the fire are to evacuate the building. Contact the WSU Fire Marshall to schedule to annual fire extinguisher training. Employees will be trained on evacuation procedures.

Upon discovering a fire:

- Immediately notify another person in the area. Call or have them call 911.
- If the fire is small (such as a wastebasket fire) and there is minimal smoke, designated trained personnel may attempt to put the fire out with a fire extinguisher.
- Non-designated personnel are to immediately evacuate and go to the designated gathering area.
- If the fire grows and/or there is thick smoke, do not continue to fight the fire.
- Notify other employees in the area to evacuate.

Supervisors notified of a fire are to:

- Instruct employees to evacuate to the designated gathering area
- Insure all employees have been evacuated.
- Verify 911 has been called.
- Determine if the fire has been extinguished. If fire has grown or there is thick smoke, evacuate any employees attempting to fight the fire.
- Go to the designated gathering area and verify all employees are accounted for. If an employee is missing, no one will be permitted to re-enter the building. The responding fire fighting personnel will be notified an employee is missing and may be in the building.

HAZARDOUS MATERIALS SPILL

In the event of a hazardous materials spill:

- Immediately secure the area to prevent people from entering
- Notify people in the immediate vicinity
- Call 911 if you are not trained per the applicable program to clean-up a hazardous materials spill.

Safety and Health Training

Superintendents will ensure all new employees receive a safety orientation on the first day of work. Topics to be covered in the safety orientation should include an overview of the following:

- This Accident Prevention Program
- Emergency Action Plan
- Hazard Notification Procedures
- Back Injury Prevention
- Outdoor Heat Stress – if applicable
- Hearing Conversation Program
- Bloodborne Pathogens Exposure Control Plan
- Accident Reporting
- Potential Job Hazards
- Equipment Specific Safety Training
- Lockout/Tag Out - if applicable
- Personal Protective Equipment
- Respiratory Protection Program

The safety orientation is to be documented on the **Safety Orientation Checklist**.

Superintendents will ensure employees receive training on each type of equipment and process they are assigned to use.

Each employee will become familiar with the manufacturer's equipment manuals and safe operating procedures. The employee will also demonstrate to their Superintendent that he/she can safely operate the equipment prior to operating without direct supervision. Employee training should be documented.

Back Injury Prevention
Repetitive lifting and lifting of heavy and awkward items can lead to back injuries. Employees regularly lifting more than 20 lbs. will receive basic back injury prevention training.

****

Policy Revision History
Policy Version / Revision Date / Revision Reason
v.1 5/14/2013 Policy approved / implemented
v.2 9/24/2013 Policy re-formatted
(date)

Quapaw Tribe of Oklahoma
CERCLA, Section 104

Grant Application for

Remedial Response Cooperative Agreement
10/1/2012 through 9/30/2014

Revised 2/11/2014

Submitted to the
U.S. Environmental Protection Agency, Region VI
Dallas, Texas

Prepared by the
Quapaw Tribe of Oklahoma Environmental Office P.O. Box 765
Quapaw, Oklahoma 74363
(918) 542-1853

I. INTRODUCTION

A. Request for Funding

The Quapaw Tribe Environmental Office (QTEO) is requesting financial assistance from the U.S. Environmental Protection Agency (EPA) to fund the remediation of a parcel of tribal trust land (commonly known as the Catholic 40) for a two (2) year period between October 1, 2012 and September 30, 2014 in Federal Fiscal Years (FFY) 2012 through FFY2014 (FFY12/14). This request is made pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Acts as amended, 42 United States Code (U.S.C.) §9601 to 9675 (CERCLA). This cooperative agreement contributes to the attainment of environmental results under Compass Program Results Code (PRC) 303DD2 as noted in EPA's Strategic Plan, Goal 3, Objective 3.2, Sub-objective 3.3.3, Annual Performance Goal 3.3: Assess and Clean Up Contaminated Land, by enabling Tribes to lead or participate in Superfund cleanups, and to consult with EPA before, during, or after Superfund Cleanup activities as provided in CERCLA §121(f).

The QTEO funding request for $2,635,882 will allow for the remediation of the Catholic 40 in a manner consistent with EPA's Record of Decision (ROD) for Operable Unit No. 4 (OU4) at the Tar Creek Superfund Site. This funding request has been prepared in accordance with 40 CFR Part 35 Subpart O, Sections 36.6100 through 36.6120.

B. Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people.

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement.

The following personnel are employed by the QTEO:

- Environmental Director – Tim Kent, P.G.
- Environmental Engineer – Craig Kreman, E.I.
- Environmental Grants Manager – Ardie Blair
- Environmental Specialist – Susie Attocknie
- Environmental Technician – Cathy Sloan

II. PROJECT NARRATIVE

A. Site Description

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma.

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and five (5) known mine shafts. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (i.e. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have been identified at the Catholic 40.

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region.

B. Culturally and Historically Significant Nature of the Catholic 40 Property

The Catholic 40 is a culturally and historically significant site to the Quapaw Tribe. Beaver Creek flows along the southwestern boundary of CB011 before flowing through the Tribal Powwow Grounds approximately 0.25 miles downstream of the Catholic 40. Due to the cultural significance of the water body, the Quapaw Tribal Business Committee has designated Beaver Creek as an Outstanding Resource Water (ORW).

The Catholic 40 also contains evidence of important events in the history of the Quapaw Tribe of Oklahoma. During recently undertaken reconnaissance efforts involving QTEO, the Quapaw Tribal Historic Preservation Officer (THPO) and the Bureau of Indian Affairs (BIA) Regional Cultural Preservation Office, several historic structures have been identified along the eastern portion of the site. These historical structures are associated with a Catholic Church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma, surrounding tribes, and the community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Outbuildings for farm animals and farming equipment also occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins. Mining began at the site in 1936 and mine waste may cover remnants of the historic buildings and other features associated with the church and school.

In order to protect and preserve the history of the Quapaw Tribe, extra precaution will be exercised during the remediation of CB011in order to protect water quality in Beaver Creek and mitigate the potential for accidental damage or removal of any structures or associated items which may help the Quapaw Tribe come to a better understanding of their history.

C. Proposed Site Specific Statement of Work (SOW)

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

Task 1: Site Remediation

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.

2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.

3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.

4. Employment of remote sensing techniques, such as ground penetrating radar, to identify graves, and buried historically significant features, before excavation begins.

5. Repair of southern access road and associated water crossings (justification for repairing and utilizing southern access road was submitted to EPA under separate cover).

6. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities. Specialized excavation techniques shall be utilized in the vicinity of historic features and foundations related to the former Catholic 40 Church and school. Tribal observers will be employed to observe excavation in sensitive areas, and an Archeologist will be available to occasionally observe remediation activity in areas where identification of historic features is needed.

7. As at other Distal chat base sites, bedrock may be encountered at depths less than 12 inches. If laboratory analyses indicate that COCs are at concentrations above PRGs in grids with less than 12 inches of soil above bedrock, clean topsoil may be brought onto the site to cap those grids.

8. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.

9. Water management, including collection, containment, and disposal of decontamination water and stream bank stabilization.

10. In the event that clean topsoil is brought from offsite; a sample will be taken and analyzed for the COCs to ensure that concentrations are below PRGs prior to placing the soil onsite.

11. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.

12. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.

13. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

Task 1 Method:

This task shall be completed by the Tribe through its construction division, Quapaw Services Authority (QSA), with the assistance of various contractors including an engineering support contractor and a laboratory contractor who will be selected by the Tribe utilizing the Tribe's existing procurement procedures which are consistent with the procurement requirements described in the Code of Federal Regulations (40

CFR Part 35 Subpart O, Section 35.6550) for States and Tribes procuring services funded by EPA through the Superfund program. In order to ensure that the QTEO has consistent capacity to manage this project, an engineering support contractor will be retained to provide assistance in development of site-specific plans, generation of remediation RFP documents, development of remediation related contracts, and on-site management of remediation activities, including providing professional archeological services. The QTEO will send Request for Proposals (RFP) to several qualified remediation related contractors as needed. Bids will be evaluated utilizing a qualification-based grading system.

Task 1 Cost Estimate:

A summary of the estimated costs associated with the completion of Task 1 is included below in Table 1.

Table 1: Summarized Cost Estimate for Task 1

Subtask Description	**Subtask Cost**
Preparation of Site-Specific Plans, Pre-construction Submittals, & Project Engineering Support	$135,000
Site Mobilization	$104,102
Site Preparation	$151,320
Preparation of Access Road	$125,580
Removal, Transportation, & Disposal of Source Material & TZ Soils	$1,528,290
Filling & Capping of Mine Shaft, Cased Borings, and Removal of Asphalt Piles	$50,200
Water Management and Stream bank Stabilization	$67,770
Confirmation Sampling and Analysis	$14,550
Site Restoration	$22,320[a]
Decontamination and Demobilization	$148,850
Follow-Up Monitoring and Maintenance of Pre-Operational Remedy	$19,000
Health and Safety Incentive	$26,000
Performance and Payment Bond	$30,000
TASK 1 TOTAL	**$2,400,662[b]**

a. *Site Restoration subtotal was not included in the $2,400,662.99 "Total Costs". As per EPA request, Site Restoration cost is absorbed under Removal, Transportation, & Disposal of Source Material & TZ Soils.*

b. This total does not include cost to remediate expanded area where historic structures exist (see section IV).

Task 1 Planned Schedule/Output:

The estimated timeline for completing the excavation and disposal portion of the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization). See the detailed project timeline on page 10.

Task 2: Tribal Project Management

The Tribe will be performing the remediation activity related to the cleanup of the Catholic 40 property; the QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of contractors, including the analytical

laboratory contractor. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 18 months of the 2 year project period. Consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

Below is a list of the primary tasks that the QTEO will undertake in overall project management, followed by a list of QTEO staff and the corresponding percentage of their time that is anticipated to be spent on that task for Year 1 and Year 2 of the project.

- Generation of Requests for Proposals (RFPs): This will include RFPs for the engineering support contractor as well as the analytical laboratory contractor that will be assisting the QTEO.

Environmental Director's Time:	**Year 1 = 8%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 7%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Development and administration of contracts: This will involve negotiating and reviewing contracts, once contractors are selected. The Tribe's attorney will be involved in this process.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- On-site inspection. This will include having a representative of the Tribe on site whenever work is performed to ensure that work complies with the plans and specifications and that historically significant features are identified and protected. On-site personnel representing the Tribe will be qualified and experienced in inspection of remediation projects and will be familiar enough with the engineering plans and all other project related documents (i.e. QA/QC plans, and Health and Safety Plan, SWPPP, SAP, SOPs, etc.) to ensure contractor compliance with the requirements in these documents. On-site personnel shall keep daily logs and take photographs of site activity. It should be noted that there will be Tribal representative, who is trained in the identification of historical features and artifacts, on site during certain phases of the remediation in which there may be a possibility of encountering these artifacts and/or features.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 3%**	**Year 2 = 1%**

Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)

- Scale Operation: A qualified tribal employee will be assigned to man and operate the on- site

truck weight scale.

Tribal Scale Operator: $12,800 (8 hrs./day for 80 days @ $20/hr.)

- Task assignment, scheduling, contractor coordination. This will include day-to-day communication with project staff and contractors regarding ongoing and planned activity as well as addressing project related issues as they arise.

Environmental Director's Time:	**Year 1 = 3%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Document review. This will include review of submittals from QSA, engineering consultant, and analytical lab (progress reports, engineering drawings, work measurement; pay requests, lab results, inspection reports, photographs, etc.).

Environmental Director's Time:	**Year 1 = 6%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 9%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Meetings: QTEO staff will participate in project related meetings including daily tailgate meetings, progress meetings, safety meetings, consultation meetings with EPA, and other meetings as issues arise. This will likely include utilization of the engineering support contractor to represent the Tribe when appropriate QTEO staff persons are unable to attend some meetings.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Coordination/consultation with, and reporting to, EPA: This will include ongoing communications and meetings with EPA's Remedial Project Manager (RPM) assigned to the project; and generating the required quarterly reports.

Environmental Director's Time:	**Year 1 = 5%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Outreach to Tribal public: This will include public meetings, newsletter articles, information availability outreach efforts, and reporting to Tribal Business Committee

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 3%**

Environmental Grants Manager's Time:	**Year 1 = 5%**	**Year 2 = 2%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 1%**

- Short-term remedy monitoring: It is anticipated that some monitoring of the Catholic 40 remediation will be required during the grant period to ensure that the remedies are performing as designed before becoming operational.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 5%**	**Year 2 = 3%**

- Training and travel: It is anticipated that travel and training will likely be required as the grant period progresses. Training is assumed to include 40-hour OSHA HAZWOPER training for Tribal non-contract personnel who will be visiting the site (CERCLA requires this training for all who enter onto a Superfund work site). It is also assumed that there will be at least 2 Trips to EPA Region 6 offices in Dallas for meetings with EPA staff regarding project progress and other site-related issues.

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 2%**	**Year 2 = 2%**

- Grant administration: This will include, but not limited to, budget tracking, records/document management and storage, and communications with EPA grant administrative staff.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 10%**	**Year 2 = 8%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- **Summary of Time and Effort Required:**

Environmental Director's Time:	**Year 1 = 30%**	**Year 2 = 20%**
Environmental Scientist's Time:	**Year 1 = 30%,**	**Year 2 = 13%**
Environmental Grants Manager's Time:	**Year 1 = 15%**	**Year 2 = 10%**
Environmental Technician's Time:	**Year 1 = 10%**	**Year 2 = 7%**

Tribal Scale Operator: $12,800
Tribal Historic Preservation Specialist: $9,600

Task 2 Method:

The Tribal project management tasks listed above will be accomplished by utilizing QTEO staff In accordance with their workload. The Tribe's engineering support contractor will be utilized as needed. All time and effort expended in completing these tasks shall be reported in the quarterly

reports to EPA.

Task 2 Cost Estimate: **$153,318.00[1]**

Note 1: Includes personnel costs and fringe benefit costs for Quapaw Tribe staff, travel, training, supplies, and indirect costs.

Task 2 Planned Schedule/Output:

It is anticipated that the Tribal project management tasks listed above will be conducted and completed throughout the grant period according to the schedule established by the remediation contractor. All activities related to remediation of the Catholic 40, including Time and Effort (T&E) reports will be included in the Quarterly Reports to EPA.

Task #	Task Description	Proposed Start Date	Proposed End Date	Time Required (days)	Task Status[1]
1	Initial Grant Award of $500,000	10/01/2012	N/A	---	Completed
2a	Develop Engineering Support RFP	10/01/2012	10/15/2012	14	Completed
3a	Solicit Bids for Eng. Support Contractor	10/16/2012	11/06/2012	21	Completed
4a	Solicit Bids for Analytical Lab Contractor	12/09/2013	12/27/2013	18	Completed
4b	Select Analytical Lab Contractor	12/27/2013	N/A	---	Completed
5	Develop Site-Specific Plans (Health & Safety Plan, Community Relations Plan, QAPP, etc.)	04/15/2013	12/15/2013	244	Completed
5b	Select Engineering Support Contractor	12/01/2012	N/A	---	Completed
7	Pre-Construction Meeting	12/16/2013	N/A	---	Completed
8	Mobilization and Site Preparation	12/01/2013	12/17/2013	21	Completed
9	Source Material Removal	12/17/2014	05/08/2014	120	Pending
10	Site Restoration	05/09/2014	06/15/2014	30	Pending
11	Post-Construction Meeting/Final Walkthrough	06/25/2014	N/A	---	Pending
12	Decontamination/Demobilization	08/01/2014	08/15/2014	14	Pending
13	Remedy Monitoring	08/15/2014	02/15/2015	180	Pending
14	Develop and Finalize Remedial Action Report	02/15/2015	04/15/2015	120	Pending
15	Finalize Grant Close-out	04/15/2015	09/15/2015	150	Pending

[1] *Tasks identified as "Completed" have been completed as of 01/27/2014 with the initial grant award of $500,000 for "administrative purposes" and the grant award for "remediation purposes" totaling $2,635,882. The timeline for successful completion of Tasks identified as "Pending" are subject to EPA's approval of the revised work plan and budget and subsequent*

award of funds for "remediation purposes".

D. Designation of Lead Site Project Manager

The lead site project manager for the Catholic 40 remediation will be Mr. Tim Kent, Environmental Director of the Quapaw Tribe Environmental Office (QTEO). The QTEO has coordinated with other Tribal departments including, but not limited to, the Tribal Realty Department and the Tribal Historic Preservation Department (THPO) in the process of planning the proposed remedial response activities.

E. Community Relations Plan

A site-specific Community Relations Plan (CRP) has been developed by the Quapaw Tribe, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(iv). This Plan states that the Tribe will prepare Fact Sheets for Tribal members, host informational meetings, and post a sign at the site to inform the public about what is happening and where to call if they see any criminal activity or trespassing on the site. The Quapaw Tribe of Oklahoma will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan.

F. Health and Safety Plan

A site-specific Health and Safety Plan (HSP) has been developed by the Quapaw Tribe and submitted to EPA Region VI before field activities began, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(v). The HSP will ensure the protection of on-site personnel and area residents.

G. Quality Assurance

The QTEO is well aware of EPA's unwavering commitment to Quality Assurance and Quality Control (QA/QC). The QTEO is equally committed to the generation of sound, scientific, quality assured data along with the successful completion of quality projects. The QTEO is currently administering five (5) EPA grants under an existing EPA-approved Quality Management Plan (QMP). All remedial activities for the proposed project will comply with the existing Site-wide Quality Assurance Plan developed for EPA by CH2M Hill. The Quapaw Tribe submitted site-specific QA/QC Plans and a Quality Assurance Project Plan (QAPPs), all of which were approved by EPA before field work began.

H. Project Deliverables

Project deliverables will be both administrative and technical in nature. The administrative/grant deliverables will include 1) quarterly reporting to the EPA-designated Project Officer on the progress made toward individual work plan tasks along with financial updates, 2) a final report documenting the successful completion of all work plan tasks, and 3) all other certifications and grant forms typically required to successfully administer and close-out an EPA grant (i.e. FSR, MBE/WBE, etc.) The technical/remediation deliverables will include: 1) weekly conference calls with the EPA-designated Remedial Project Manager (RPM) to report on the progress made in planning, implementing, and finishing the proposed remedial project, 2) a final walk through

with EPA staff and Tribal representatives prior to project close-out, and 3) a remedial action report upon project close-out. The target dates for these project deliverables are incorporated into the proposed project timeline in Section 2.C.

III. CERCLA ASSURANCES

A. Operation and Maintenance

The Quapaw Tribe of Oklahoma will assume responsibility for all future operation and maintenance of the CERCLA-funded remedial action at the Catholic 40 for the expected life of the action as required by CERCLA Section 104(c).

B. Cost Sharing

The Quapaw Tribe of Oklahoma will not share in the cost of the CERCLA-funded remedial action at the Catholic 40 as Indian Tribes are not required to share in such costs according to 40 CFR Part 35 Subpart O, Section 35.6110(b)(3).

C. Twenty-Year Waste Capacity of Off-Site Disposal Location

An undetermined amount of source material will be disposed of on-site to fill open mine shafts and subsidence features at the Catholic 40. Otherwise, all remaining source other material and TZ soils will be disposed of off-site at the EPA-approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK. This repository is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the remediation of the Catholic 40.

D. Notification of out-of-an-area-of-Indian-Country transfer of CERCLA Waste

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120.

IV. WORK PLAN REVISION

Due to budget considerations and Tribal priorities related to the remediation of the Catholic 40 property, this work plan is being hereby revised. This revision represents the Tribe's desire to expand the original work area to include the eastern portion of the site where historic and culturally significant features currently exist (until now, this area was deemed the "exclusion zone" where work was not to occur due to its sensitive historically significant nature). This will require additional remedial effort than was originally proposed and will require the use of specialized investigative and excavation techniques to insure that the historical and cultural features in the expanded work area are identified and protected before, and during, remediation.

A. Additional Work

The additional work that prompted this revision will involve moving east past the exclusion zone

fence to clean up chat and TZ soils around the historical structures of the former Catholic church, dormitory, and auxiliary structures. Remedial activities will include clearing and grubbing, specialized investigative techniques such as Ground penetrating Radar (GPR), hand shoveling, and excavation of chat and TZ soils with smaller mechanical equipment, when necessary. Additional mineshafts (and collapsed features, vent pipes) have been discovered and current/amended site-specific plans will be utilized in addressing proper abandonment procedures of collapsed features and vent shafts (when encountered).

B. Sequence of Additional Work

Following is a detailed description of the sequence of work that will occur in the historically sensitive eastern portion of the site:

1. The expanded portion of the work area shall be surveyed and additional grids, covering the expanded portion of the work area, shall be established. Topographic surveying shall be utilized to obtain elevations of accumulations of source material so that quantities can be estimated. Test holes shall be drilled at various locations throughout the expanded portion of the work area to help estimate the thickness of visible source material (primarily chat), and thereby provide additional information for estimating volume of source material. Finally, any observable mine shafts, vent shafts, subsidence features shall be surveyed for precise location. The existing site map shall be amended to show the additional surveyed features, grids, and expanded work area.

2. Hand Work will be required over the entire area for the eastern catholic 40 exclusion zone to aid in tree removal, brush clearing, and investigation and removal of source material in and around the structures. Due to the amount of structures and hazards in the exclusion zone, all preliminary clearing and investigative work will be done by hand with chain saws, skid steers and mini excavators. There have been numerous mine shafts, vent openings, subsidence features, and even a head stone discovered in the eastern exclusion zone of catholic 40. It is the intent of the Quapaw Tribe to initially move into the exclusion zone area with chain saws to clear brush and small trees so that vicinity can be improved and identify anymore possible historic structures or features. It should be noted that an Archeologist, who is experienced in investigating Tribal sites, will be available during remediation of the eastern portion of the site, when requested by the Tribe, to come to the site to consult with representatives of the Tribe, when needed, to help identify historic features or to provide recommendations regarding protecting historic structures and the implementing specialized investigative efforts, including when and where to utilize GPR.

3. Once the features and structures are identified, mini excavators and hand shovels will be used to find the outlying edges of structures that are to be protected and preserved. Some of the structures have trees growing inside of them and against existing walls; these trees will be removed by hand with chain saws. Additionally, source material (chat) has been placed directly against a good portion of the height of the walls of some structures and will require removal by small excavating machines coupled with hand excavation. Each structure will be analyzed individually to determine if source material must be shoveled out by hand or if mini excavators can be used to remove source material away from the structure walls.

4. Once visibility is improved in the "catholic 40 East" area (former "exclusion zone"), access paths will be cleared to the mine shaft opening and vent pipes. Small bull dozers and excavators will be used to fill the mine shafts and thereby improve the safety of the eastern exclusion zone. Subsidence features will be investigated further with excavators and then filled with on site material. All filling of shafts, subsidence features , and vent shafts shall be performed according to procedures established in the site specific plans.

5. Once mine shafts are filled and all historic structural features have been identified, then the removal of source material and bull rock will begin using larger equipment if access is available. If access to source material is not available for the larger equipment or it is too dangerous or disturbing to the historic features then the small skid steers and mini excavators will be used to bring source material and bull rock out to a loading area for the larger equipment to handle and to load into haul trucks.

6. Once all visible source material is removed, then the TZ soils in the grid areas will be tested and evaluated for concentrations of COCs. Sampling, analysis, and ultimate removal of TZ soils shall be done according to the procedures established in the site specific plans

B. Estimated Cost of Additional Work

The cost estimate spreadsheet (Appendix C – "Task 1 Budget Spreadsheet") is a revision the one submitted for the original Catholic 40 budget, reflecting that some of projected costs (funds) have been redirected from unfinished or unused line items in the original spreadsheet related to remediation of the western portion of the site, to the new line item 14 ("Catholic 40 East"). Specifically, when funds were redirected from *unfinished* line items related to remediation of the western portion of the site to the new line item 14, a note was added in the comment field to reflect that these funds were "borrowed' from the original line items and must be added back (refunded) at a later date in order to finish the remediation of the western portion of the site. When funds were redirected from *unused* line items related to remediation of the western portion of the site to the new line item 14, a note was added in the comment field to reflect that these funds were "moved' from the original line items to the new line item 14 and will not need to be refunded at later date

due to the fact that they were associated with tasks that were not needed or that ultimately cost less than anticipated.

A large portion of the projected costs for tasks listed in the new line item 14 ("Catholic 40 East"), was determined by multiplying unit costs in the original budget by quantities derived from investigative efforts within the "Catholic 40 East" area (surveying and test boring). Other portions of the projected costs for tasks listed in the new line item 14 ("Catholic 40 East") are based on ongoing costs that were simply shifted from the original budget line items to the new line item 14, reflecting the redirected priority to the "Catholic 40 East" area. Less significant projected costs for new activities necessary to remediate the historically and culturally sensitive "Catholic 40 East" area (archeologist, GPR, hand excavation, ect.), were estimated by utilizing costs incurred by the Tribe in the past during similar activities on other projects.

In Summary, as indicated by the attached revised budget spread sheet, the Tribe intends to redirect a total of **$836,640** from the original "Contractual" portion of the grant budget **($2,400,662)**, to the projected cost of the remediation of the "Catholic 40 East" area. It should be stated that although this revision of the work plan reflects the Tribe's desire to redirect cleanup priorities to the "Catholic 40 East" area, while not depleting the funds in the original grant amount, the Tribe intends to amend this grant application again in the near future to request additional funds to complete any remediation left undone by this work reprioritization.

V. BUDGET NARRATIVE

See overall grant budget in Appendix D.

Quapaw Tribe of Oklahoma
CERCLA, Section 104

Grant Application for

Remedial Response Cooperative Agreement
10/1/2012 through 9/30/2014

Revised 2/11/2014

Submitted to the
U.S. Environmental Protection Agency, Region VI
Dallas, Texas

Prepared by the
Quapaw Tribe of Oklahoma Environmental Office P.O. Box 765
Quapaw, Oklahoma 74363
(918) 542-1853

I. INTRODUCTION

A. Request for Funding

The Quapaw Tribe Environmental Office (QTEO) is requesting financial assistance from the U.S. Environmental Protection Agency (EPA) to fund the remediation of a parcel of tribal trust land (commonly known as the Catholic 40) for a two (2) year period between October 1, 2012 and September 30, 2014 in Federal Fiscal Years (FFY) 2012 through FFY2014 (FFY12/14). This request is made pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Acts as amended, 42 United States Code (U.S.C.) §9601 to 9675 (CERCLA). This cooperative agreement contributes to the attainment of environmental results under Compass Program Results Code (PRC) 303DD2 as noted in EPA's Strategic Plan, Goal 3, Objective 3.2, Sub-objective 3.3.3, Annual Performance Goal 3.3: Assess and Clean Up Contaminated Land, by enabling Tribes to lead or participate in Superfund cleanups, and to consult with EPA before, during, or after Superfund Cleanup activities as provided in CERCLA §121(f).

The QTEO funding request for $2,635,882 will allow for the remediation of the Catholic 40 in a manner consistent with EPA's Record of Decision (ROD) for Operable Unit No. 4 (OU4) at the Tar Creek Superfund Site. This funding request has been prepared in accordance with 40 CFR Part 35 Subpart O, Sections 36.6100 through 36.6120.

B. Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people.

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement.

The following personnel are employed by the QTEO:

- Environmental Director – Tim Kent, P.G.
- Environmental Engineer – Craig Kreman, E.I.
- Environmental Grants Manager – Ardie Blair
- Environmental Specialist – Susie Attocknie
- Environmental Technician – Cathy Sloan

II. PROJECT NARRATIVE

A. Site Description

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma.

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and five (5) known mine shafts. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (i.e. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have been identified at the Catholic 40.

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region.

B. Culturally and Historically Significant Nature of the Catholic 40 Property

The Catholic 40 is a culturally and historically significant site to the Quapaw Tribe. Beaver Creek flows along the southwestern boundary of CB011 before flowing through the Tribal Powwow Grounds approximately 0.25 miles downstream of the Catholic 40. Due to the cultural significance of the water body, the Quapaw Tribal Business Committee has designated Beaver Creek as an Outstanding Resource Water (ORW).

The Catholic 40 also contains evidence of important events in the history of the Quapaw Tribe of Oklahoma. During recently undertaken reconnaissance efforts involving QTEO, the Quapaw Tribal Historic Preservation Officer (THPO) and the Bureau of Indian Affairs (BIA) Regional Cultural Preservation Office, several historic structures have been identified along the eastern portion of the site. These historical structures are associated with a Catholic Church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma, surrounding tribes, and the community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Outbuildings for farm animals and farming equipment also occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins. Mining began at the site in 1936 and mine waste may cover remnants of the historic buildings and other features associated with the church and school.

In order to protect and preserve the history of the Quapaw Tribe, extra precaution will be exercised during the remediation of CB011in order to protect water quality in Beaver Creek and mitigate the potential for accidental damage or removal of any structures or associated items which may help the Quapaw Tribe come to a better understanding of their history.

C. Proposed Site Specific Statement of Work (SOW)

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

Task 1: Site Remediation

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.

2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.

3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.

4. Employment of remote sensing techniques, such as ground penetrating radar, to identify graves, and buried historically significant features, before excavation begins.

5. Repair of southern access road and associated water crossings (justification for repairing and utilizing southern access road was submitted to EPA under separate cover).

6. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities. Specialized excavation techniques shall be utilized in the vicinity of historic features and foundations related to the former Catholic 40 Church and school. Tribal observers will be employed to observe excavation in sensitive areas, and an Archeologist will be available to occasionally observe remediation activity in areas where identification of historic features is needed.

7. As at other Distal chat base sites, bedrock may be encountered at depths less than 12 inches. If laboratory analyses indicate that COCs are at concentrations above PRGs in grids with less than 12 inches of soil above bedrock, clean topsoil may be brought onto the site to cap those grids.

8. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.

9. Water management, including collection, containment, and disposal of decontamination water and stream bank stabilization.

10. In the event that clean topsoil is brought from offsite; a sample will be taken and analyzed for the COCs to ensure that concentrations are below PRGs prior to placing the soil onsite.

11. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.

12. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.

13. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

Task 1 Method:

This task shall be completed by the Tribe through its construction division, Quapaw Services Authority (QSA), with the assistance of various contractors including an engineering support contractor and a laboratory contractor who will be selected by the Tribe utilizing the Tribe's existing procurement procedures which are consistent with the procurement requirements described in the Code of Federal Regulations (40

CFR Part 35 Subpart O, Section 35.6550) for States and Tribes procuring services funded by EPA through the Superfund program. In order to ensure that the QTEO has consistent capacity to manage this project, an engineering support contractor will be retained to provide assistance in development of site-specific plans, generation of remediation RFP documents, development of remediation related contracts, and on-site management of remediation activities, including providing professional archeological services. The QTEO will send Request for Proposals (RFP) to several qualified remediation related contractors as needed. Bids will be evaluated utilizing a qualification-based grading system.

Task 1 Cost Estimate:

A summary of the estimated costs associated with the completion of Task 1 is included below in Table 1.

Table 1: Summarized Cost Estimate for Task 1

Subtask Description	**Subtask Cost**
Preparation of Site-Specific Plans, Pre-construction Submittals, & Project Engineering Support	$135,000
Site Mobilization	$104,102
Site Preparation	$151,320
Preparation of Access Road	$125,580
Removal, Transportation, & Disposal of Source Material & TZ Soils	$1,528,290
Filling & Capping of Mine Shaft, Cased Borings, and Removal of Asphalt Piles	$50,200
Water Management and Stream bank Stabilization	$67,770
Confirmation Sampling and Analysis	$14,550
Site Restoration	$22,320[a]
Decontamination and Demobilization	$148,850
Follow-Up Monitoring and Maintenance of Pre-Operational Remedy	$19,000
Health and Safety Incentive	$26,000
Performance and Payment Bond	$30,000
TASK 1 TOTAL	**$2,400,662[b]**

a. *Site Restoration subtotal was not included in the $2,400,662.99 "Total Costs". As per EPA request, Site Restoration cost is absorbed under Removal, Transportation, & Disposal of Source Material & TZ Soils.*

b. This total does not include cost to remediate expanded area where historic structures exist (see section IV).

Task 1 Planned Schedule/Output:

The estimated timeline for completing the excavation and disposal portion of the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization). See the detailed project timeline on page 10.

Task 2: Tribal Project Management

The Tribe will be performing the remediation activity related to the cleanup of the Catholic 40 property; the QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of contractors, including the analytical

laboratory contractor. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort will be required of Tribal staff during the first 18 months of the 2 year project period. Consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

Below is a list of the primary tasks that the QTEO will undertake in overall project management, followed by a list of QTEO staff and the corresponding percentage of their time that is anticipated to be spent on that task for Year 1 and Year 2 of the project.

- Generation of Requests for Proposals (RFPs): This will include RFPs for the engineering support contractor as well as the analytical laboratory contractor that will be assisting the QTEO.

Environmental Director's Time:	**Year 1 = 8%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 7%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Development and administration of contracts: This will involve negotiating and reviewing contracts, once contractors are selected. The Tribe's attorney will be involved in this process.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 0%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- On-site inspection. This will include having a representative of the Tribe on site whenever work is performed to ensure that work complies with the plans and specifications and that historically significant features are identified and protected. On-site personnel representing the Tribe will be qualified and experienced in inspection of remediation projects and will be familiar enough with the engineering plans and all other project related documents (i.e. QA/QC plans, and Health and Safety Plan, SWPPP, SAP, SOPs, etc.) to ensure contractor compliance with the requirements in these documents. On-site personnel shall keep daily logs and take photographs of site activity. It should be noted that there will be Tribal representative, who is trained in the identification of historical features and artifacts, on site during certain phases of the remediation in which there may be a possibility of encountering these artifacts and/or features.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 3%**	**Year 2 = 1%**

Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)

- Scale Operation: A qualified tribal employee will be assigned to man and operate the on- site

truck weight scale.

Tribal Scale Operator: $12,800 (8 hrs./day for 80 days @ $20/hr.)

- Task assignment, scheduling, contractor coordination. This will include day-to-day communication with project staff and contractors regarding ongoing and planned activity as well as addressing project related issues as they arise.

Environmental Director's Time:	**Year 1 = 3%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 4%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Document review. This will include review of submittals from QSA, engineering consultant, and analytical lab (progress reports, engineering drawings, work measurement, pay requests, lab results, inspection reports, photographs, etc.).

Environmental Director's Time:	**Year 1 = 6%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 9%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Meetings: QTEO staff will participate in project related meetings including daily tailgate meetings, progress meetings, safety meetings, consultation meetings with EPA, and other meetings as issues arise. This will likely include utilization of the engineering support contractor to represent the Tribe when appropriate QTEO staff persons are unable to attend some meetings.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 2%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

Coordination/consultation with, and reporting to, EPA: This will include ongoing communications and meetings with EPA's Remedial Project Manager (RPM) assigned to the project; and generating the required quarterly reports.

Environmental Director's Time:	**Year 1 = 5%**	**Year 2 = 5%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Outreach to Tribal public: This will include public meetings, newsletter articles, information availability outreach efforts, and reporting to Tribal Business Committee

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 3%**

Environmental Grants Manager's Time:	**Year 1 = 5%**	**Year 2 = 2%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 1%**

- Short-term remedy monitoring: It is anticipated that some monitoring of the Catholic 40 remediation will be required during the grant period to ensure that the remedies are performing as designed before becoming operational.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 5%**	**Year 2 = 3%**

- Training and travel: It is anticipated that travel and training will likely be required as the grant period progresses. Training is assumed to include 40-hour OSHA HAZWOPER training for Tribal non-contract personnel who will be visiting the site (CERCLA requires this training for all who enter onto a Superfund work site). It is also assumed that there will be at least 2 Trips to EPA Region 6 offices in Dallas for meetings with EPA staff regarding project progress and other site-related issues.

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Scientist's Time:	**Year 1 = 1%,**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 2%**	**Year 2 = 2%**

- Grant administration: This will include, but not limited to, budget tracking, records/document management and storage, and communications with EPA grant administrative staff.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 2%**
Environmental Scientist's Time:	**Year 1 = 0%,**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 10%**	**Year 2 = 8%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- **Summary of Time and Effort Required:**

Environmental Director's Time:	**Year 1 = 30%**	**Year 2 = 20%**
Environmental Scientist's Time:	**Year 1 = 30%,**	**Year 2 = 13%**
Environmental Grants Manager's Time:	**Year 1 = 15%**	**Year 2 = 10%**
Environmental Technician's Time:	**Year 1 = 10%**	**Year 2 = 7%**
Tribal Scale Operator: $12,800		
Tribal Historic Preservation Specialist: $9,600		

Task 2 Method:

The Tribal project management tasks listed above will be accomplished by utilizing QTEO staff In accordance with their workload. The Tribe's engineering support contractor will be utilized as needed. All time and effort expended in completing these tasks shall be reported in the quarterly

reports to EPA.

Task 2 Cost Estimate: **$153,318.00**[1]

Note 1: Includes personnel costs and fringe benefit costs for Quapaw Tribe staff, travel, training, supplies, and indirect costs.

Task 2 Planned Schedule/Output:

It is anticipated that the Tribal project management tasks listed above will be conducted and completed throughout the grant period according to the schedule established by the remediation contractor. All activities related to remediation of the Catholic 40, including Time and Effort (T&E) reports will be included in the Quarterly Reports to EPA.

Task #	Task Description	Proposed Start Date	Proposed End Date	Time Required (days)	Task Status[1]
1	Initial Grant Award of $500,000	10/01/2012	N/A	---	Completed
2a	Develop Engineering Support RFP	10/01/2012	10/15/2012	14	Completed
3a	Solicit Bids for Eng. Support Contractor	10/16/2012	11/06/2012	21	Completed
4a	Solicit Bids for Analytical Lab Contractor	12/09/2013	12/27/2013	18	Completed
4b	Select Analytical Lab Contractor	12/27/2013	N/A	---	Completed
5	Develop Site-Specific Plans (Health & Safety Plan, Community Relations Plan, QAPP, etc.)	04/15/2013	12/15/2013	244	Completed
5b	Select Engineering Support Contractor	12/01/2012	N/A	---	Completed
7	Pre-Construction Meeting	12/16/2013	N/A	---	Completed
8	Mobilization and Site Preparation	12/01/2013	12/17/2013	21	Completed
9	Source Material Removal	12/17/2014	05/08/2014	120	Pending
10	Site Restoration	05/09/2014	06/15/2014	30	Pending
11	Post-Construction Meeting/Final Walkthrough	06/25/2014	N/A	---	Pending
12	Decontamination/Demobilization	08/01/2014	08/15/2014	14	Pending
13	Remedy Monitoring	08/15/2014	02/15/2015	180	Pending
14	Develop and Finalize Remedial Action Report	02/15/2015	04/15/2015	120	Pending
15	Finalize Grant Close-out	04/15/2015	09/15/2015	150	Pending

[1] *Tasks identified as "Completed" have been completed as of 01/27/2014 with the initial grant award of $500,000 for "administrative purposes" and the grant award for "remediation purposes" totaling $2,635,882. The timeline for successful completion of Tasks identified as "Pending" are subject to EPA's approval of the revised work plan and budget and subsequent*

award of funds for "remediation purposes".

D. Designation of Lead Site Project Manager

The lead site project manager for the Catholic 40 remediation will be Mr. Tim Kent, Environmental Director of the Quapaw Tribe Environmental Office (QTEO). The QTEO has coordinated with other Tribal departments including, but not limited to, the Tribal Realty Department and the Tribal Historic Preservation Department (THPO) in the process of planning the proposed remedial response activities.

E. Community Relations Plan

A site-specific Community Relations Plan (CRP) has been developed by the Quapaw Tribe, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(iv). This Plan states that the Tribe will prepare Fact Sheets for Tribal members, host informational meetings, and post a sign at the site to inform the public about what is happening and where to call if they see any criminal activity or trespassing on the site. The Quapaw Tribe of Oklahoma will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan.

F. Health and Safety Plan

A site-specific Health and Safety Plan (HSP) has been developed by the Quapaw Tribe and submitted to EPA Region VI before field activities began, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(v). The HSP will ensure the protection of on-site personnel and area residents.

G. Quality Assurance

The QTEO is well aware of EPA's unwavering commitment to Quality Assurance and Quality Control (QA/QC). The QTEO is equally committed to the generation of sound, scientific, quality assured data along with the successful completion of quality projects. The QTEO is currently administering five (5) EPA grants under an existing EPA-approved Quality Management Plan (QMP). All remedial activities for the proposed project will comply with the existing Site-wide Quality Assurance Plan developed for EPA by CH2M Hill. The Quapaw Tribe submitted site-specific QA/QC Plans and a Quality Assurance Project Plan (QAPPs), all of which were approved by EPA before field work began.

H. Project Deliverables

Project deliverables will be both administrative and technical in nature. The administrative/grant deliverables will include 1) quarterly reporting to the EPA-designated Project Officer on the progress made toward individual work plan tasks along with financial updates, 2) a final report documenting the successful completion of all work plan tasks, and 3) all other certifications and grant forms typically required to successfully administer and close-out an EPA grant (i.e. FSR, MBE/WBE, etc.) The technical/remediation deliverables will include: 1) weekly conference calls with the EPA-designated Remedial Project Manager (RPM) to report on the progress made in planning, implementing, and finishing the proposed remedial project, 2) a final walk through

with EPA staff and Tribal representatives prior to project close-out, and 3) a remedial action report upon project close-out. The target dates for these project deliverables are incorporated into the proposed project timeline in Section 2.C.

III. CERCLA ASSURANCES

A. Operation and Maintenance

The Quapaw Tribe of Oklahoma will assume responsibility for all future operation and maintenance of the CERCLA-funded remedial action at the Catholic 40 for the expected life of the action as required by CERCLA Section 104(c).

B. Cost Sharing

The Quapaw Tribe of Oklahoma will not share in the cost of the CERCLA-funded remedial action at the Catholic 40 as Indian Tribes are not required to share in such costs according to 40 CFR Part 35 Subpart O, Section 35.6110(b)(3).

C. Twenty-Year Waste Capacity of Off-Site Disposal Location

An undetermined amount of source material will be disposed of on-site to fill open mine shafts and subsidence features at the Catholic 40. Otherwise, all remaining source other material and TZ soils will be disposed of off-site at the EPA-approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK. This repository is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the remediation of the Catholic 40.

D. Notification of out-of-an-area-of-Indian-Country transfer of CERCLA Waste

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120.

IV. WORK PLAN REVISION

Due to budget considerations and Tribal priorities related to the remediation of the Catholic 40 property, this work plan is being hereby revised. This revision represents the Tribe's desire to expand the original work area to include the eastern portion of the site where historic and culturally significant features currently exist (until now, this area was deemed the "exclusion zone" where work was not to occur due to its sensitive historically significant nature). This will require additional remedial effort than was originally proposed and will require the use of specialized investigative and excavation techniques to insure that the historical and cultural features in the expanded work area are identified and protected before, and during, remediation.

A. Additional Work

The additional work that prompted this revision will involve moving east past the exclusion zone

fence to clean up chat and TZ soils around the historical structures of the former Catholic church, dormitory, and auxiliary structures. Remedial activities will include clearing and grubbing, specialized investigative techniques such as Ground penetrating Radar (GPR), hand shoveling, and excavation of chat and TZ soils with smaller mechanical equipment, when necessary. Additional mineshafts (and collapsed features, vent pipes) have been discovered and current/amended site-specific plans will be utilized in addressing proper abandonment procedures of collapsed features and vent shafts (when encountered).

B. Sequence of Additional Work

Following is a detailed description of the sequence of work that will occur in the historically sensitive eastern portion of the site:

1. The expanded portion of the work area shall be surveyed and additional grids, covering the expanded portion of the work area, shall be established. Topographic surveying shall be utilized to obtain elevations of accumulations of source material so that quantities can be estimated. Test holes shall be drilled at various locations throughout the expanded portion of the work area to help estimate the thickness of visible source material (primarily chat), and thereby provide additional information for estimating volume of source material. Finally, any observable mine shafts, vent shafts, subsidence features shall be surveyed for precise location. The existing site map shall be amended to show the additional surveyed features, grids, and expanded work area.

2. Hand Work will be required over the entire area for the eastern catholic 40 exclusion zone to aid in tree removal, brush clearing, and investigation and removal of source material in and around the structures. Due to the amount of structures and hazards in the exclusion zone, all preliminary clearing and investigative work will be done by hand with chain saws, skid steers and mini excavators. There have been numerous mine shafts, vent openings, subsidence features, and even a head stone discovered in the eastern exclusion zone of catholic 40. It is the intent of the Quapaw Tribe to initially move into the exclusion zone area with chain saws to clear brush and small trees so that vicinity can be improved and identify anymore possible historic structures or features. It should be noted that an Archeologist, who is experienced in investigating Tribal sites, will be available during remediation of the eastern portion of the site, when requested by the Tribe, to come to the site to consult with representatives of the Tribe, when needed, to help identify historic features or to provide recommendations regarding protecting historic structures and the implementing specialized investigative efforts, including when and where to utilize GPR.

3. Once the features and structures are identified, mini excavators and hand shovels will be used to find the outlying edges of structures that are to be protected and preserved. Some of the structures have trees growing inside of them and against existing walls; these trees will be removed by hand with chain saws. Additionally, source material (chat) has been placed directly against a good portion of the height of the walls of some structures and will require removal by small excavating machines coupled with hand excavation. Each structure will be analyzed individually to determine if source material must be shoveled out by hand or if mini excavators can be used to remove source material away from the structure walls.

4. Once visibility is improved in the "catholic 40 East" area (former "exclusion zone"), access paths will be cleared to the mine shaft opening and vent pipes. Small bull dozers and excavators will be used to fill the mine shafts and thereby improve the safety of the eastern exclusion zone. Subsidence features will be investigated further with excavators and then filled with on site material. All filling of shafts, subsidence features , and vent shafts shall be performed according to procedures established in the site specific plans.

5. Once mine shafts are filled and all historic structural features have been identified, then the removal of source material and bull rock will begin using larger equipment if access is available. If access to source material is not available for the larger equipment or it is too dangerous or disturbing to the historic features then the small skid steers and mini excavators will be used to bring source material and bull rock out to a loading area for the larger equipment to handle and to load into haul trucks.

6. Once all visible source material is removed, then the TZ soils in the grid areas will be tested and evaluated for concentrations of COCs. Sampling, analysis, and ultimate removal of TZ soils shall be done according to the procedures established in the site specific plans

B. Estimated Cost of Additional Work

The cost estimate spreadsheet (Appendix C – "Task 1 Budget Spreadsheet") is a revision the one submitted for the original Catholic 40 budget, reflecting that some of projected costs (funds) have been redirected from unfinished or unused line items in the original spreadsheet related to remediation of the western portion of the site, to the new line item 14 ("Catholic 40 East"). Specifically, when funds were redirected from *unfinished* line items related to remediation of the western portion of the site to the new line item 14, a note was added in the comment field to reflect that these funds were "borrowed' from the original line items and must be added back (refunded) at a later date in order to finish the remediation of the western portion of the site. When funds were redirected from *unused* line items related to remediation of the western portion of the site to the new line item 14, a note was added in the comment field to reflect that these funds were "moved' from the original line items to the new line item 14 and will not need to be refunded at later date

due to the fact that they were associated with tasks that were not needed or that ultimately cost less than anticipated.

A large portion of the projected costs for tasks listed in the new line item 14 ("Catholic 40 East"), was determined by multiplying unit costs in the original budget by quantities derived from investigative efforts within the "Catholic 40 East" area (surveying and test boring). Other portions of the projected costs for tasks listed in the new line item 14 ("Catholic 40 East") are based on ongoing costs that were simply shifted from the original budget line items to the new line item 14, reflecting the redirected priority to the "Catholic 40 East" area. Less significant projected costs for new activities necessary to remediate the historically and culturally sensitive "Catholic 40 East" area (archeologist, GPR, hand excavation, ect.), were estimated by utilizing costs incurred by the Tribe in the past during similar activities on other projects.

In Summary, as indicated by the attached revised budget spread sheet, the Tribe intends to redirect a total of **$836,640** from the original "Contractual" portion of the grant budget **($2,400,662)**, to the projected cost of the remediation of the "Catholic 40 East" area. It should be stated that although this revision of the work plan reflects the Tribe's desire to redirect cleanup priorities to the "Catholic 40 East" area, while not depleting the funds in the original grant amount, the Tribe intends to amend this grant application again in the near future to request additional funds to complete any remediation left undone by this work reprioritization.

V. BUDGET NARRATIVE

See overall grant budget in Appendix D.

	Line Items	QTY	Unit	Revised Line Item $	Subtotal	Billed thru 1/12/14	Balance to-date unbilled on CA40	Moved to CA40 East	Budget adjustment explanations
1	**Preparation of Site-Specific Plans, Pre-construction Submittals, and Project Engineering Support**								
	a. Site Work Plan	1	PLAN	12,500.00	12,500.00	12,500.00	-		
	b. Field Sampling and Analysis Plan	1	PLAN	7,500.00	7,500.00	7,500.00	-		
	c. QA Project Plan	1	PLAN	7,500.00	7,500.00	7,500.00	-		
	d. Site Management Plan	1	PLAN	7,500.00	7,500.00	7,500.00	-		
	e. Storm water Pollution Prevention Plan	1	PLAN	7,500.00	7,500.00	7,500.00	-		
	f. Construction Quality Assurance Plan	1	PLAN	7,500.00	7,500.00	7,500.00	-		
	g. Transportation Plan	1	PLAN	5,000.00	5,000.00	5,000.00	-		
	h. Disposition Plan	1	PLAN	5,000.00	5,000.00	5,000.00	-		
	i. Mine Shaft Closure Plan	*1*	*PLAN*	*10,000.00*	*10,000.00*	*10,000.00*	-		
	j. Closed Boring Abandonment Procedures	1	PLAN	2,500.00	2,500.00	2,500.00	-		
	k. Site Health and Safety Plan - QTEO	1	PLAN	5,000.00	5,000.00	5,000.00	-		
	l. Site Health and Safety Plan - Engineer/Construction Manager	1	PLAN	5,000.00	5,000.00	5,000.00	-		
	m. Site Health and Safety Plan - Contractor	1	PLAN	5,000.00	5,000.00	5,000.00	-		
	n. Waste Management Plan	1	PLAN	2,500.00	2,500.00	2,500.00	-		
	o. Spill Response Plan	1	PLAN	2,500.00	2,500.00	2,500.00	-		
	p. Develop RFP	1	RFP	3,500.00	3,500.00	3,500.00	-		
	q. Evaluate Proposals and Develop Contract	1	CONTRACT	7,500.00	7,500.00	7,500.00	-		
	r. Develop Community Relation Plan	1	PLAN	3,000.00	3,000.00	3,000.00	-		
	s. Review Pre-Construction Submittals	1	REVIEW	1,800.00	1,800.00	1,800.00	-		
	t. Pre-Construction Meeting in Quapaw, OK	1	MEETING	2,400.00	2,400.00	2,400.00	-		
	u. Third Party - ID Utilities	1	REPORT	1,500.00	1,500.00	-	1,500.00	1,500.00	$1,500 moved to East. $1,500 moved to 14b.
	v. Engage Oklahoma Surveyor to Shoot Boundaries and Mark Work Areas	1	SURVEY	17,500.00	17,500.00	17,500.00	-		
	w. Develop Remedial Action Report	1	REPORT	5,300.00	5,300.00	-	5,300.00	5,300.00	$5,300 must be replaced to finish CA40. $2,500 borrowed for 14a. $2,800 borrowed for 14c.
	Line Item 1 Subtotal				135,000.00				
2	**Site Mobilization**								
	a. Office Trailer w/ Utilities	6	MONTHS	2,145.00	12,870.00	6,435.00	6,435.00	6,435.00	$6,435 must be replaced to finish CA40. $1,700 borrowed for 14c. $1,500 borrowed for 14d. $2,500 borrowed for 14e. $735 borrowed for 14f.
	b. Portable Toilets = 5	6	MONTHS	520.00	3,120.00	1,560.00	1,560.00	1,560.00	$1,560 must be replaced to finish CA40. $1,560 borrowed for 14f.
	c. Portable Truck Scales	6	MONTHS	3,900.00	23,400.00	11,700.00	11,700.00	11,700.00	$11,700 must be replaced to finish CA40. $11,700 borrowed for 14f.
	d. Portable Truck Scales, Building w/ Utilities	6	MONTHS	1,980.00	11,880.00	5,940.00	5,940.00	5,940.00	$5,940 must be replaced to finish CA40. $5 borrowed for 14f. $5,935 borrowed for 14g.
	e. Safety/Zone Fencing, Signage & Barricades	1	LUMP SUM	6,240.00	6,240.00	6,240.00	-		
	f. Lighted Traffic Boards = 2	6	MONTHS	2,340.00	14,040.00	7,020.00	7,020.00	7,020.00	$7,020 must be replaced to finish CA40. $7,020 borrowed for 14g.
	g. 25K lb Excavator	1	DELIVERY	1,560.00	1,560.00	1,560.00	-		
	h. 100K lb Excavator	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	i. 30 Ton Off Road Truck	*1*	*DELIVERY*	*3,250.00*	*3,250.00*	*3,250.00*	-		
	j. 40 Ton Off Road Truck	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	k. Mini Excavator	2	DELIVERY	1,625.00	3,250.00	-	3,250.00	3,250.00	$3,250 moved to East. $2,045 moved to 14g. $1,205 moved to 14h.
	l. Ag Tractor w/attachments	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	m. 7.25 cy Wheel Loader	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	n. Motor Grader	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	o. 25K lb Dozer	1	DELIVERY	1,560.00	1,560.00	1,560.00	-		
	p. 80K lb Dozer	1	DELIVERY	3,250.00	3,250.00	3,250.00	-		
	q. Skid Steer w/Sweeper Att.	1	DELIVERY	1,560.00	1,560.00	1,560.00	-		
	r. Rubber Tire Backhoe w/ Forks Att.	1	DELIVERY	1,560.00	1,560.00	1,560.00	-		
	s. Excavator w/attachment	1	DELIVERY	1,560.00	1,560.00	1,560.00	-		
	Line Item 2 Subtotal				105,350.00				
3	**Site Preparation**								
	a. Install Protective Fencing	1000	LF	6.50	6,500.00	6,500.00	-		
	b. Clearing & Grubbing	5	ACRE	11,050.00	55,250.00	55,250.00	-		
	c. Zone Establishments	1	LUMP SUM	7,020.00	7,020.00	7,020.00	-		
	d. Prep Site, Set Office & Utilities	1	LUMP SUM	15,600.00	15,600.00	15,600.00	-		
	e. Materials for Office (Sb-2 Gravel, Stairs, Misc.)	1	LUMP SUM	10,400.00	10,400.00	10,400.00	-		
	f. Prep Site Scales, Office & Utilities	1	LUMP SUM	27,300.00	27,300.00	27,300.00	-		
	g. Materials for Scales (Sb-2 Gravel, Concrete, Misc.)	1	LUMP SUM	15,600.00	15,600.00	15,600.00	-		
	h. Traffic Controls	1	LUMP SUM	4,550.00	4,550.00	4,550.00	-		
	i. Utility Locates and Drawing Prep (Subcontracted)	*1*	*LUMP SUM*	*4,550.00*	*4,550.00*	*4,550.00*	-		
	j. Install Decontamination Zone	1	LUMP SUM	4,550.00	4,550.00	4,550.00	-		
	Line Item 3 Subtotal				151,320.00				
4	**Construction of Temporary Access Road**								
	Southern Access 2308' x 26'								
	a. Excavation and Embankment	970	CY	9.10	8,827.00	8,827.00	-		
	b. Borrow	48.5	CY	14.00	679.00	679.00	-		
	c. Geogrid for Pavement (Complete in Place)	1290	SY	5.60	7,224.00	7,224.00	-		
	d. Base Course for Haul Road (for Repairs)	950	TONS	35.00	33,250.00	33,250.00	-		
	e. R.C. Pipe (Class III) Culvert (Two Stream Crossings)	200	LF	91.00	18,200.00	18,200.00	-		
	f. Seeding	2	AC	2,330.00	4,660.00	-	4,660.00	4,660.00	$4,660 must be replaced to finish CA40. $4,660 borrowed for 14h.
	g. Mulch Cover	2	AC	3,500.00	7,000.00	-	7,000.00	7,000.00	$7,000 must be replaced to finish CA40. $7,000 borrowed for 14h.
	h. Site Preparation (incl. Mobilization)	1	LS	32,660.00	32,660.00	32,660.00	-		
	i. Trench and Excavation Safety Systems	1	LS	3,270.00	3,270.00	3,270.00	-		
	j. Erosion Control & Maintenance	1	LS	6,540.00	6,540.00	6,540.00	-		
	k. Roadway Construction Control	1	LS	3,270.00	3,270.00	3,270.00	-		
	Temporary Access Road Subtotal				125,580.00				
5	**Removal, Transportation, and Disposal of Source Material, Waste Material, and TZ Soils**								
	a. Engineering Support During Remediation	1	SUPPORT	21,000.00	21,000.00	5,250.00	15,750.00	15,750.00	$135 moved to 14h, $5,300 moved to 14l, $4,290 moved to 14j, $1,040 moved to 14k, $3,900 moved to 14l, $1,085 moved to 14m.
	b. On Site Engineering Construction Manager During Remediation Activities	80	DAYS	953.00	76,240.00	19,060.00	57,180.00	57,180.00	$850 moved to 14m, $3,510 moved to 14n, $3,000 moved to 14o, $6,500 moved to 14p, $43,275 moved to 14q
	c. Engineering Contractor Project Meetings with Quapaw Tribe	6	MEETING	1,550.00	9,300.00	4,650.00	4,650.00	4,650.00	$4,650 must be replaced to finish CA40. $4,650 borrowed for 14q.
	d. Engineering Contractor Project Meetings with EPA Region 6 in Dallas, TX	2	MEETING	1,024.50	2,049.00	-	2,049.00	2,049.00	$2,049 moved to 14q.
	e. Water Truck and Water for Dust Control	100	DAYS	1,436.50	143,650.00	50,277.50	93,372.50	93,372.50	$93,372.50 must be replaced to finish CA40. $49,476 borrowed for 14q, $7,020 borrowed for 14r, $4,000 borrowed for 14s, $6,401 borrowed for 14t, $3,270 borrowed for 14u, $23,205.50 borrowed for 14v.
	f. Removal and Transportation of Source Material to Repository	1E+05	TONS	11.00	1,173,700.00	842,886.00	330,814.00	330,814.00	$330,814 must be replaced to finish CA40. $330,814 borrowed for 14w.
	g. Excavate by Hand w/ Equipment Support	300	TONS	130.00	39,000.00	19,500.00	19,500.00	19,500.00	$19,500 must be replaced to finish CA40. $19,500 borrowed for 14v.
	h. 20 cy Roll Off Containers, Waste Material X2	50	DAYS	650.00	32,500.00	17,550.00	14,950.00	14,950.00	$14,950 must be replaced to finish CA40. $374.50 borrowed for 14v, $14,575.50 borrowed for 14x.
	i. Survey and Layout - BIA Certified Surveyor	20	DAYS	1,105.00	22,100.00	11,050.00	11,050.00	11,050.00	$11,050 must be replaced to finish CA40. $11,050 borrowed for 14x.

	Line Items	QTY	Unit	Revised Line Item $	Subtotal	Billed thru 1/12/14	Balance to-date unbilled on CA40	Moved to CA40 East	Budget adjustment explanations
	j. Construction Fencing and Barricade Replacement	2000	LF	4.00	8,000.00	4,000.00	4,000.00	4,000.00	$4,000 must be replaced to finish CA40. $4,000 borrowed for 14x.
	Line Item 5 Subtotal				1,527,539.00				
6	Filling and Capping of Mine Shafts, Cased Borings, and Removal of Asphalt Piles								
	a. Mine Shaft Filling, Adjustable per Site Conditions ea.	1	LUMP SUM	19,500.00	19,500.00	19,500.00	-		
	b. Subsidence Features, Filling per Site Conditions ea.	1	LUMP SUM	15,000.00	15,000.00	-	15,000.00	15,000.00	$15,000 moved to 14x.
	c. Cased Borings	1	LUMP SUM	12,000.00	12,000.00	-	12,000.00	12,000.00	$12,000 moved to 14x.
	d. Remove Waste Asphalt Piles	1660	TONS	20.00	33,203.00	33,203.00	-		
	Line Item 6 Subtotal				79,703.00				
7	Water Management								
	a. Silt Curtain	2200	LF	6.00	13,200.00	6,600.00	6,600.00	6,600.00	$6,600 must be replaced to finish CA40. $6,600 borrowed for 14x.
	b. Hay Bales	642	BALES	10.00	6,420.00	5,000.00	1,420.00	1,420.00	$1,420 must be replaced to finish CA40. $1,420 borrowed for 14x.
	c. Rock Ditch Checks	520	TONS	20.00	10,400.00	10,400.00	-		
	d. Rip Rap	35	TONS	50.00	1,750.00	1,750.00	-		
	e. Gabion Buckets	10	BUCKETS	200.00	2,000.00		2,000.00	2,000.00	$2,000 moved to 14x.
	f. Initial Installation an management of SWPPP	1	LS	30,000.00	30,000.00	30,000.00	-		
	g. Maintenance of Erosion Control	1	LS	4,000.00	4,000.00	-	4,000.00	4,000.00	$4,000 must be replaced to finish CA40. $4,000 borrowed for 14x.
	h. 20k gl. Frac Tanks, Storm water Collection x 2	50	DAYS	2,340.00	-	-	-		
	i. Double Bag, 10 Micron & 25 Micron Water Filter	50	DAYS	3,185.00	-	-	-		
	j. Storm Water Pumping and Handling	50	DAYS	1,820.00	-	-	-		
	Line Item 7 Subtotal				67,770.00				
8	Sampling and Analyses								
	a. Field Sampling, Compositing, Sieving	5	EVENT	900.00	4,500.00	2,250.00	2,250.00	2,250.00	$2,250 must be replaced to finish CA40. $2,250 borrowed for 14x.
	b. Analytical (10 day TAT)	48	SAMPLES	75.00	3,600.00	1,800.00	1,800.00	1,800.00	$1,800 must be replaced to finish CA40. $1,800 borrowed for 14x.
	c. Analytical (3 day TAT)	8	SAMPLES	150.00	1,200.00	600.00	600.00	600.00	$600 must be replaced to finish CA40. $600 borrowed for 14x.
	d. Level IV Data Package	12	REPORT	100.00	1,200.00	600.00	600.00	600.00	$600 must be replaced to finish CA40. $600 borrowed for 14x.
	e. MAES-Sampling and XRF (Pb)	6	SAMPLES	675.00	4,050.00	2,025.00	2,025.00	2,025.00	$2,025 must be replaced to finish CA40. $2,025 borrowed for 14x.
	Line Item 8 Subtotal				14,550.00				
9	Site Restoration								
	a. Post Construction Final Site Review	1	REVIEW	1,550.00	-	-	-		ITEMS NOT INCLUDED IN ORIGINAL BUDGET
	b. Develop Remedial Action Report	1	REPORT	5,300.00	-	-	-		
	c. Topographic Survey of Grids by BIA Certified Surveyor	14	GRIDS	1,105.00	-	-	-		
	d. Soil Amendments & Hydro mulching	14	GRIDS	1,300.00	-	-	-		
	e. Maintain Grid to 70% Cover	14	GRIDS	2,600.00	-	-	-		
	Line Item 9 Subtotal			*see footnote 1*	-		-		
10	Decontamination and Demobilization								
	a. Decon & Demobilize Scales	1	LUMP SUM	22,100.00	22,100.00	-	22,100.00	22,100.00	$22,100 must be replaced to finish CA40. $22,100 borrowed for 14x.
	b. Decon & Demobilize Heavy Equipment	1	LUMP SUM	109,850.00	109,850.00	-	109,850.00	109,850.00	$109,850 must be replaced to finish CA40. $29,979.50 borrowed for 14x. $6,500 borrowed for 14y. $22,100 borrowed for 14z, $20,000 borrowed for 14aa, $20,000 borrowed for 14bb, $5,000 borrowed for 14cc, $6,000 borrowed for 14ee. $270.50 borrowed for 14ff.
	c. Decon & Demobilize Office	1	LUMP SUM	7,800.00	7,800.00	-	7,800.00	7,800.00	$7,800 must be replaced to finish CA40. $7,800 borrowed for 14ff.
	d. Decon & Demobilize Water Equip.	1	LUMP SUM	4,550.00	4,550.00	-	4,550.00	4,550.00	$4,550 must be replaced to finish CA40. $50 borrowed for 14ff, $4,500 borrowed for 14hh.
	e. Decon & Demobilize Roll Off Boxes	1	LUMP SUM	4,550.00	4,550.00	-	4,550.00	4,550.00	$4,550 must be replaced to finish CA40. $50 borrowed for 14ff, $4,500 borrowed for 14ii.
	Line Item 10 Subtotal				148,850.00				
11	Pret-Operational Follow-Up Construction								
	a. Maintenance of Capped Mine Shaft Until Final Acceptance of Remedial Action				11,000.00	-	11,000.00	11,000.00	$11,000 must be replaced to finish CA40. $11,000 borrowed for 14kk.
	b. Maintenance of Vegetative Cover Until Final Acceptance of Remedial Action				6,000.00	-	6,000.00	6,000.00	$6,000 must be replaced to finish CA40. $6,000 borrowed for 14ll.
	c. Repair of Erosion Controls Until Final Acceptance of Remedial Action				2,000.00	-	2,000.00	2,000.00	$2,000 must be replaced to finish CA40. $2,000 borrowed for 14mm.
	Line Item 11 Subtotal				19,000.00				
12	Health and Safety Incentive								
	Health and Safety Incentive								$12,814 must be replaced to finish CA40. $1,829.50 borrowed for 14ff, $1,500 borrowed for 14gg, $1,200 borrowed for 14jj, $8,284.50 borrowed for 14nn.
	a.				26,000.00	13,186.00	12,814.00	12,814.00	
	Line Item 12 Subtotal				26,000.00				
13	Subcontractor Performance and Payment Bond (If needed FOR SUBCONTRACTS OVER $150,000)								
	a. Performance and Payment Bond				-	-	-		
	Line Item 13 Subtotal				-				
				Total Costs	$ 2,400,662.00	1,564,022.50	836,639.50	836,639.50	

1 Section 9 subtotal was not included as the $2,400,662.99 "Total Costs". As per EPA request, Site Restoration cost is absorbed under Section 5.

	Line Items	QTY	Unit	Revised Line Item $	Subtotal	Billed thru 1/12/14	Balance to-date unbilled on CA40	Moved to CA40 East	Budget adjustment explanations
14	CATHOLIC 40 EAST								
	a. Site Work Plan	1	PLAN	2,500.00	2,500.00	-		2,500.00	$2,500 borrowed from 1w.
	b. Site Management Plan	1	PLAN	1,500.00	1,500.00	-		1,500.00	$1,500 moved from 1u.
	c. Storm water Pollution Prevention Plan	1	PLAN	4,500.00	4,500.00	-		4,500.00	$2,800 borrowed from 1w. $1,700 borrowed from 2a.
	d. Closed Boring Abandonment Procedures	1	PLAN	1,500.00	1,500.00	-		1,500.00	$1,500 borrowed from 2a.
	e. Site Health and Safety Plan - QTEO	1	PLAN	2,500.00	2,500.00	-		2,500.00	$2,500 borrowed from 2a.
	f. Ground Penetrating Radar (GPR)	1	LUMP SUM	14,000.00	14,000.00	-		14,000.00	$735 borrowed from 2a, $1,560 borrowed from 2b, $11,700 borrowed from 2c, $5 borrowed from 2d.
	g. Archeology Consultant (BIA)	30	DAYS	500.00	15,000.00	-		15,000.00	$5,935 borrowed from 2d, $7,020 from 2f. $2,045 moved from 2k.
	h. Engage Oklahoma Surveyor to Shoot Boundaries and Mark Work Areas	1	SURVEY	13,000.00	13,000.00	-		13,000.00	$1,205 moved from 2k, $4,660 borrowed from 4f, $7,000 borrowed from 4g, $135 moved from 5a.
	i. Develop Remedial Action Report	1	REPORT	5,300.00	5,300.00	-		5,300.00	$5,300 moved from 5a.
	j. Office Trailer w/ Utilities	2	MONTHS	2,145.00	4,290.00	-		4,290.00	$4,290 moved from 5a.
	k. Portable Toilets x 5	2	MONTHS	520.00	1,040.00	-		1,040.00	$1,040 moved from 5a.
	l. Portable Truck Scales	1	MONTHS	3,900.00	3,900.00	-		3,900.00	$3,900 moved from 5a.
	m. Portable Truck Scales, Building w/ Utilities	1	MONTHS	1,980.00	1,980.00	-		1,980.00	$1,085 moved from 5a, $895 moved from 5b.
	n. Lighted Traffic Boards x 3	1*	MONTHS	3,510.00	3,510.00	-		3,510.00	$3,510 moved from 5b.

	Line Items	QTY	Unit	Revised Line Item $	Subtotal	Billed thru 1/12/14	Balance to-date unbilled on CA40	Moved to CA40 East	Budget adjustment explanations
o.	15k lb mini Excavator	2	DELIVERY	1,500.00	3,000.00	-		3,000.00	$3,000 moved from 5b.
p.	Install Protective Fencing	1000	LF	6.50	6,500.00	-		6,500.00	$6,500 moved from 5b.
q.	Clearing & Grubbing	9	ACRE	11,050.00	99,450.00	-		99,450.00	$43,275 moved from 5b, $4,650 borrowed from 5c, $2,049 moved from 5d, $49,476 borrowed from 5e.
r.	Zone Establishments	1	LUMP SUM	7,020.00	7,020.00	-		7,020.00	$7,020 borrowed from 5e.
s.	Utility Locates and Drawing Prep (Subcontracted)	1	LUMP SUM	4,000.00	4,000.00	-		4,000.00	$4,000 borrowed from 5e.
t.	Erosion Control & Maintenance	1	LS	6,401.00	6,401.00	-		6,401.00	$6,401 borrowed from 5e.
u.	Roadway Construction Control	1	LS	3,270.00	3,270.00	-		3,270.00	$3,270 borrowed from 5e.
v.	*Water Truck and Water for Dust Control*	30	DAYS	1,436.00	43,080.00	-		43,080.00	$23,205.50 borrowed from 5e, $19,500 borrowed from 5g, $374.50 borrowed from 5h.
w.	Removal and Transportation of Source Material to Repository	30074	TONS	11.00	330,814.00	-		330,814.00	$330,814 borrrowed from 5f.
x.	Excavate by Hand w/ Equipment Support	1000	TONS	130.00	130,000.00	-		130,000.00	$14,575.50 borrowed from 5h, $11,050 borrowed from 5i, $4,000 borrowed from 5j, $15,000 moved from 6b, $12,000 moved from 6c, $6,600 borrowed from 7a, $1,420 borrowed from 7b, $2,000 moved from 7e, $4,000 borrowed from 7g, $2,250 borrowed from 8a, $1,800 borrowed from 8b, $600 borrowed from 8c, $600 borrowed from 8d, $2,025 borrowed from 8e, $22,100 borrowed from 10a, $29,979.50 borrowed from 10b.
y.	20 cy Roll Off Containers, Waste Material X2	10	DAYS	650.00	6,500.00	-		6,500.00	$6,500 borrowed from 10b.
z.	Survey and Layout - BIA Certified Surveyor	20	DAYS	1,105.00	22,100.00	-		22,100.00	$22,100 borrowed from 10b.
aa	Mine Shaft Filling, Adjustable per Site Conditions ea.	4	EA	5,000.00	20,000.00	-		20,000.00	$20,000 borrowed from 10b.
bb	*Subsidence Features, Filling per Site Conditions ea.*	4	EA	5,000.00	20,000.00	-		20,000.00	$20,000 borrowed from 10b.
cc	Cased Borings	2	EA	2,500.00	5,000.00	-		5,000.00	$5,000 borrowed from 10b.
dd	Remove Waste Asphalt Piles	0	TONS	-	-	-		-	
ee	Silt Curtain	1000	LF	6.00	6,000.00	-		6,000.00	$6,000 borrowed from 10b.
ff	Initial Installation an management of SWPPP	1	LS	10,000.00	10,000.00	-		10,000.00	$270.50 borrowed from 10b, $7,800 borrowed from 10c, $50 borrowed from 10d, $50 borrowed from 10e, $1,829.50 borrowed from 12a.
gg	*Maintenance of Erosion Control*	1	LS	1,500.00	1,500.00	-		1,500.00	$1,500 borrowed from 12a.
hh	Field Sampling, Compositing, Sieving	5	EVENT	900.00	4,500.00	-		4,500.00	$4,500 borrowed from 10d.
ii	Analytical (10 day TAT)	60	SAMPLES	75.00	4,500.00	-		4,500.00	$4,500 borrowed from 10e.
jj	Level IV Data Package	12	REPORT	100.00	1,200.00	-		1,200.00	$1,200 borrowed from 12a.
kk	Maintenance of Capped Mine Shaft Until Final Acceptance of Remedial Action				11,000.00	-		11,000.00	$11,000 borrowed from 11a.
ll	Maintenance of Vegetative Cover Until Final Acceptance of Remedial Action				6,000.00	-		6,000.00	$6,000 borrowed from 11b.
mm	Repair of Erosion Controls Until Final Acceptance of Remedial Action				2,000.00	-		2,000.00	$2,000 borrowed from 11c.
nn	Health and Safety Incentive (1% OF BUDGET)				8,284.50	-		8,284.50	$8,284.50 borrowed from 12a.
Total Costs					836,639.50			836,639.50	

Original Catholic 40 budget:	2,400,662.00
Billed on Catholic 40:	1,564,022.50
Moved to CA40E:	836,639.50
Left on CA40:	-
	2,400,662.00

Quapaw Tribe of Oklahoma
CERCLA, Section 104

Grant Application for

Remedial Response Cooperative Agreement
10/1/2012 through 9/30/2014

Revised 2/03/2014

Submitted to the
U.S. Environmental Protection Agency, Region VI
Dallas, Texas

Prepared by the
Quapaw Tribe of Oklahoma Environmental Office P.O. Box 765
Quapaw, Oklahoma 74363
(918) 542-1853

I. INTRODUCTION

A. Request for Funding

The Quapaw Tribe Environmental Office (QTEO) is requesting financial assistance from the U.S. Environmental Protection Agency (EPA) to fund the remediation of a parcel of tribal trust land (commonly known as the Catholic 40) for a two (2) year period between October 1, 2012 and September 30, 2014 in Federal Fiscal Years (FFY) 2012 through FFY2014 (FFY12/14). This request is made pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Acts as amended, 42 United States Code (U.S.C.) §9601 to 9675 (CERCLA). This cooperative agreement contributes to the attainment of environmental results under Compass Program Results Code (PRC) 303DD2 as noted in EPA's Strategic Plan, Goal 3, Objective 3.2, Sub-objective 3.3.3, Annual Performance Goal 3.3: Assess and Clean Up Contaminated Land, by enabling Tribes to lead or participate in Superfund cleanups, and to consult with EPA before, during, or after Superfund Cleanup activities as provided in CERCLA §121(f).

The QTEO funding request for $2,635,882 will allow for the remediation of the Catholic 40 in a manner consistent with EPA's Record of Decision (ROD) for Operable Unit No. 4 (OU4) at the Tar Creek Superfund Site. This funding request has been prepared in accordance with 40 CFR Part 35 Subpart O, Sections 36.6100 through 36.6120.

B. Background

Through the EPA Region VI General Assistance Program (GAP), the Quapaw Tribe Environmental Office was established on October 1, 1997. In June of 1998, the Quapaw Tribal Chairman and the EPA Region VI Administrator signed a Tribal Environmental Agreement (TEA), which established a formal agreement between the Tribe and the EPA to address the issues raised regarding the environmental protection of the Quapaw Tribal land including without limitation land known as the Catholic 40. As a result of that process, the Tribal Environmental Office is working toward the remediation of Tribal land on the Tar Creek Superfund Site in such a manner which protects human health, the environment, and the cultural heritage of the Quapaw people.

The Quapaw Tribe is currently administering an EPA Superfund management assistance grant under an existing Superfund support agency cooperative agreement. The Tribe entered into this support agency cooperative agreement with EPA Region 6 in 2001. This management assistance grant has enabled the Tribe to provide 'meaningful and substantial involvement" in the decisions related to the development and implementation of the OU4 ROD. Working together with EPA and other stakeholders on Tar Creek issues over the past 12 years has enabled the QTEO to develop the technical capacity required to administer a remedial response cooperative agreement.

The following personnel are employed by the QTEO:

- Environmental Director – Tim Kent, P.G.
- Environmental Engineer – Craig Kreman, E.I.
- Environmental Grants Manager – Ardie Blair
- Environmental Specialist – Susie Attocknie
- Environmental Technician – Cathy Sloan

II. PROJECT NARRATIVE

A. Site Description

The Tar Creek Superfund Site is a former lead and zinc mining area in Ottawa County, Oklahoma, located within the Oklahoma portion of the Tri-State Mining District, which covers parts of Oklahoma, Kansas, and Missouri. The Tar Creek Superfund Site includes an area (approximately 40 square miles) in northern Ottawa County where lead and zinc mining operations were conducted and any area where a hazardous substance from mining or milling in Ottawa County has been stored or disposed. The Tar Creek Superfund Site also includes all suitable areas in close proximity to the contamination necessary for implementation of the response action. The Tar Creek Superfund Site is bound on the north by the Kansas state line and includes the communities of Cardin, Commerce, North Miami, Picher, and Quapaw, Oklahoma.

The Catholic 40 is located in Distal Group 8 (Distal 8) of the Tar Creek Superfund Site. Distal 8 represents only a small portion of the overall Tar Creek Superfund Site. Distal 8 includes one (1) chat base (CB011) and five (5) possible mine shafts. CB011 is located within the north half of Section 6 Township 28 North (T28N) Range 24 East (R24E), and more specifically, within Ottawa County Parcel 0000-06-028-024-0-001-00. An east-west running property line divides CB011 into two sections: CB011 North on non-restricted fee land and CB011 South on tribal trust land owned by the Quapaw Tribe. CB011 North is not included within the scope of this proposed remedial response. Hereafter, CB011 is named to refer to the CB011 South portion of the chat base. Contaminated mine and mill wastes, also known as source material, in the form of chat, fine tailings, flotation tailings, and development rock, all in varying amounts, have affected both soil and water at the Catholic 40. This proposed remedial response will address only source material and affected transition zone (TZ) soils. The contaminants of concern (COCs) at the Catholic 40 are lead, zinc, and cadmium.

Mining at the Catholic 40 has also impacted surface water quality at the Catholic 40 (i.e. Beaver Creek). Chat-laden surface water runoff from the Catholic 40 has contributed to water quality impairment in Beaver Creek. While mine water discharges to the surface at multiple locations in the Beaver Creek watershed, no mine water discharges have been identified at the Catholic 40.

Ground water quality in the Beaver Creek watershed has also been impacted by mining. Of the two main aquifers in the region, the shallow Boone and the deeper Roubidoux, mining activities were confined to the overlying Boone. Thus, the Boone aquifer is the primary source of subsurface ground water contamination. Once the extensive network of mine workings filled with water, the water became acidic and laden with metals. The underlying Roubidoux aquifer is the principal source of drinking water or the region.

B. Culturally and Historically Significant Nature of the Catholic 40 Property

The Catholic 40 is a culturally and historically significant site to the Quapaw Tribe. Beaver Creek flows along the southwestern boundary of CB011 before flowing through the Tribal Powwow Grounds approximately 0.25 miles downstream of the Catholic 40. Due to the cultural significance of the water body, the Quapaw Tribal Business Committee has designated Beaver Creek as an Outstanding Resource Water (ORW).

The Catholic 40 also contains evidence of important events in the history of the Quapaw Tribe of Oklahoma. During recently undertaken reconnaissance efforts involving QTEO, the Quapaw Tribal Historic Preservation Officer (THPO) and the Bureau of Indian Affairs (BIA) Regional Cultural Preservation Office, several historic structures have been identified along the eastern portion of the site. These historical structures are associated with a Catholic church and school that provided educational opportunities to the Quapaw Tribe of Oklahoma, surrounding tribes, and the community. The church was established on the property in 1893 and the associated school house was constructed in 1894. Buildings were added to the property over a period of years as the number of students increased. The school had both resident and day students and dormitories were constructed to house the resident students. Outbuildings for farm animals and farming equipment also occupied portions of the property. Funding was discontinued and the school closed in 1927. After closure, some wood-frame buildings were removed, while others were allowed to fall into ruins. Mining began at the site in 1936 and mine waste may cover remnants of the historic buildings and other features associated with the church and school.

In order to protect and preserve the history of the Quapaw Tribe, extra precaution will be exercised during the remediation of CB011in order to protect water quality in Beaver Creek and mitigate the potential for accidental damage or removal of any structures or associated items which may help the Quapaw Tribe come to a better understanding of their history.

C. Proposed Site Specific Statement of Work (SOW)

In order to complete the remediation of the Catholic 40 property, the Tribe anticipates completing the following two major tasks.

Task 1: Site Remediation

The remediation of the Catholic 40 property shall consist of the following subtasks:

1. Preparation of site specific plans and pre-construction submittals, including material submittals, health and safety related certifications, personnel related requirements, site specific work plans, etc.

2. Mobilization, including installation of decontamination facilities, waste containment facilities, scale house, construction trailers etc.

3. Site preparation, including pre-construction site survey, protection and marking of historic features, site clearing, work zone establishment, etc.

4. Employment of remote sensing techniques, such as ground penetrating radar, to identify graves, and buried historically significant features, before excavation begins.

5. Repair of southern access road and associated water crossings (justification for repairing and utilizing southern access road was submitted to EPA under separate cover).

6. Removal, transportation, and disposition of source material, waste materials, and TZ soils, including furnishing and maintaining weight scales and associated facilities. Specialized excavation techniques shall be utilized in the vicinity of historic features and foundations related to the former Catholic 40 Church and school. Tribal observers will be employed to observe excavation in sensitive areas, and an Archeologist will be available to occasionally observe remediation activity in areas where identification of historic features is needed.

7. As at other Distal chat base sites, bedrock may be encountered at depths less than 12 inches. If laboratory analyses indicate that COCs are at concentrations above PRGs in grids with less than 12 inches of soil above bedrock, clean topsoil may be brought onto the site to cap those grids.

8. Filling and capping of mine shafts, and cased borings, including cover construction over filled mine shafts.

9. Water management, including collection, containment, and disposal of decontamination water and stream bank stabilization.

10. In the event that clean topsoil is brought from offsite; a sample will be taken and analyzed for the COCs to ensure that concentrations are below PRGs prior to placing the soil onsite.

11. Site restoration, including grading and surveying for verification of grid excavation depth and aerial extent.

12. Decontamination and demobilization, including intermediate decontamination before exiting the exclusion zone, disposal of debris and rinsate, and deconstruct/demobilize all site facilities.

13. Follow-up monitoring of remediated areas and maintenance, as needed, to address inadequacies of the remedy before it becomes operational.

Task 1 Method:

This task shall be completed by the Tribe through its construction division, Quapaw Services Authority (QSA), with the assistance of various contractors including an engineering support contractor and a laboratory contractor who will be selected by the Tribe utilizing the Tribe's existing procurement procedures which are consistent with the procurement requirements described in the Code of Federal Regulations (40

CFR Part 35 Subpart O, Section 35.6550) for States and Tribes procuring services funded by EPA through the Superfund program. In order to ensure that the QTEO has consistent capacity to manage this project, an engineering support contractor will be retained to provide assistance in development of site-specific plans, generation of remediation RFP documents, development of remediation related contracts, and on-site management of remediation activities, including providing professional archeological services. The QTEO will send Request for Proposals (RFP) to several qualified remediation related contractors as needed. Bids will be evaluated utilizing a qualification-based grading system.

Task 1 Cost Estimate:

A summary of the estimated costs associated with the completion of Task 1 is included below in Table 1.

Table 1: Summarized Cost Estimate for Task 1

Subtask Description	**Subtask Cost**
Preparation of Site-Specific Plans, Pre-construction Submittals, & Project Engineering Support	$135,000
Site Mobilization	$104,102
Site Preparation	$151,320
Preparation of Access Road	$125,580
Removal, Transportation, & Disposal of Source Material & TZ Soils	$1,528,290
Filling & Capping of Mine Shaft, Cased Borings, and Removal of Asphalt Piles	$50,200
Water Management and Stream bank Stabilization	$67,770
Confirmation Sampling and Analysis	$14,550
Site Restoration	$22,320[a]
Decontamination and Demobilization	$148,850
Follow-Up Monitoring and Maintenance of Pre-Operational Remedy	$19,000
Health and Safety Incentive	$26,000
Performance and Payment Bond	$30,000
TASK 1 TOTAL	**$2,400,662**

[a] *Site Restoration subtotal was not included in the $2,400,662.99 "Total Costs". As per EPA request, Site Restoration cost is absorbed under Removal, Transportation, & Disposal of Source Material & TZ Soils.*

Task 1 Planned Schedule/Output:

The estimated timeline for completing the excavation and disposal portion of the remediation activity at the Catholic 40 site is approximately 6 months (from mobilization to the site to demobilization). See the detailed project timeline on page 10.

Task 2: Tribal Project Management

The Tribe will be performing the remediation activity related to the cleanup of the Catholic 40 property; the QTEO will be responsible for the management of the Cooperative Agreement grant and for general project management and oversight of contractors, including the analytical laboratory contractor. Accordingly, the Tribe will have the ultimate authority in ensuring the quality and effectiveness of the remediation. The Tribe anticipates that more time and effort

will be required of Tribal staff during the first 18 months of the 2 year project period. Consequently, the percentage of time required for each staff person to complete work plan tasks is as subdivided into Year 1 and Year 2 subcategories.

Below is a list of the primary tasks that the QTEO will undertake in overall project management, followed by a list of QTEO staff and the corresponding percentage of their time that is anticipated to be spent on that task for Year 1 and Year 2 of the project.

- Generation of Requests for Proposals (RFPs): This will include RFPs for the engineering support contractor as well as the analytical laboratory contractor that will be assisting the QTEO.

Environmental Director's Time:	**Year 1 = 8%**	**Year 2 = 0%**
Environmental Engineer's Time:	**Year 1 = 7%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Development and administration of contracts: This will involve negotiating and reviewing contracts, once contractors are selected. The Tribe's attorney will be involved in this process.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 0%**
Environmental Engineer's Time:	**Year 1 = 4%**	**Year 2 = 0%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- On-site inspection. This will include having a representative of the Tribe on site whenever work is performed to ensure that work complies with the plans and specifications and that historically significant features are identified and protected. On-site personnel representing the Tribe will be qualified and experienced in inspection of remediation projects and will be familiar enough with the engineering plans and all other project related documents (i.e. QA/QC plans, and Health and Safety Plan, SWPPP, SAP, SOPs, etc.) to ensure contractor compliance with the requirements in these documents. On-site personnel shall keep daily logs and take photographs of site activity. It should be noted that there will be Tribal representative, who is trained in the identification of historical features and artifacts, on site during certain phases of the remediation in which there may be a possibility of encountering these artifacts and/or features.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 2%**
Environmental Engineer's Time:	**Year 1 = 2%**	**Year 2 = 4%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 3%**	**Year 2 = 6%**
Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)		

- Scale Operation: A qualified tribal employee will be assigned to man and operate the on- site truck weight scale.

- Document review. This will include review of submittals from QSA, engineering consultant, and analytical lab (progress reports, engineering drawings, work measurement, pay requests, lab results, inspection reports, photographs, etc.).

Environmental Director's Time:	**Year 1 = 6%**	**Year 2 = 2%**
Environmental Engineer's Time:	**Year 1 = 9%**	**Year 2 = 2%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Meetings: QTEO staff will participate in project related meetings including daily tailgate meetings, progress meetings, safety meetings, consultation meetings with EPA, and other meetings as issues arise. This will likely include utilization of the engineering support contractor to represent the Tribe when appropriate QTEO staff persons are unable to attend some meetings.

Environmental Director's Time:	**Year 1 = 2%**	**Year 2 = 2%**
Environmental Engineer's Time:	**Year 1 = 2%**	**Year 2 = 4%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Coordination/consultation with, and reporting to, EPA: This will include ongoing communications and meetings with EPA's Remedial Project Manager (RPM) assigned to the project; and generating the required quarterly reports.

Environmental Director's Time:	**Year 1 = 5%**	**Year 2 = 5%**
Environmental Engineer's Time:	**Year 1 = 1%**	**Year 2 = 4%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- Outreach to Tribal public: This will include public meetings, newsletter articles, information availability outreach efforts, and reporting to Tribal Business Committee

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 4%**
Environmental Engineer's Time:	**Year 1 = 0%**	**Year 2 = 6%**
Environmental Grants Manager's Time:	**Year 1 = 5%**	**Year 2 = 2%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 1%**

- Short-term remedy monitoring: It is anticipated that some monitoring of the Catholic 40 remediation will be required during the grant period to ensure that the remedies are performing as designed before becoming operational.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 2%**
Environmental Engineer's Time:	**Year 1 = 0%**	**Year 2 = 4%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 5%**	**Year 2 = 6%**

- Training and travel: It is anticipated that travel and training will likely be required as the grant period progresses. Training is assumed to include 40-hour OSHA HAZWOPER training for Tribal non-contract personnel who will be visiting the site (CERCLA requires this training for all who enter onto a Superfund work site). It is also assumed that there will be at least 2 Trips to EPA Region 6 offices in Dallas for meetings with EPA staff regarding project progress and other site-related issues.

Environmental Director's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Engineer's Time:	**Year 1 = 1%**	**Year 2 = 1%**
Environmental Grants Manager's Time:	**Year 1 = 0%**	**Year 2 = 0%**
Environmental Technician's Time:	**Year 1 = 2%**	**Year 2 = 2%**

- Grant administration: This will include, but not limited to, budget tracking, records/document management and storage, and communications with EPA grant administrative staff.

Environmental Director's Time:	**Year 1 = 0%**	**Year 2 = 4%**
Environmental Engineer's Time:	**Year 1 = 0%**	**Year 2 = 4%**
Environmental Grants Manager's Time:	**Year 1 = 10%**	**Year 2 = 8%**
Environmental Technician's Time:	**Year 1 = 0%**	**Year 2 = 0%**

- **Summary of Time and Effort Required:**

Environmental Director's Time:	**Year 1 = 27%**	**Year 2 = 22%**
Environmental Engineer's Time:	**Year 1 = 26%**	**Year 2 = 29%**
Environmental Grants Manager's Time:	**Year 1 = 15%**	**Year 2 = 10%**
Environmental Technician's Time:	**Year 1 = 10%**	**Year 2 = 15%**
Tribal Historic Preservation Specialist: $9,600 (8 hrs./day for 40 days @ $30/hr.)		

Task 2 Method:

The Tribal project management tasks listed above will be accomplished by utilizing QTEO staff according to their workload. The Tribe's engineering support contractor will be utilized as needed. All time and effort expended in completing these tasks shall be reported in the quarterly reports to EPA.

Task 2 Cost Estimate: **$153,318.00**[1]

Note 1: Includes personnel costs and fringe benefit costs for Quapaw Tribe staff, travel, training, supplies, and indirect costs.

Task 2 Planned Schedule/Output:

It is anticipated that the Tribal project management tasks listed above will be conducted and completed throughout the grant period according to the schedule established by the remediation contractor. All activities related to remediation of the Catholic 40, including Time and Effort (T&E) reports will be included in the Quarterly Reports to EPA.

Task #	Task Description	Proposed Start Date	Proposed End Date	Time Required (days)	Task Status[1]
1	Initial Grant Award of $500,000	10/01/2012	N/A	---	Completed
2a	Develop Engineering Support RFP	10/01/2012	10/15/2012	14	Completed
3a	Solicit Bids for Eng. Support Contractor	10/16/2012	11/06/2012	21	Completed
4a	Solicit Bids for Analytical Lab Contractor	12/09/2013	12/27/2013	18	Completed
4b	Select Analytical Lab Contractor	12/27/2013	N/A	---	Completed
5	Develop Site-Specific Plans (Health & Safety Plan, Community Relations Plan, QAPP, etc.)	04/15/2013	12/15/2013	244	Completed
5b	Select Engineering Support Contractor	12/01/2012	N/A	---	Completed
7	Pre-Construction Meeting	12/16/2013	N/A	---	Completed
8	Mobilization and Site Preparation	12/01/2013	12/17/2013	21	Completed
9	Source Material Removal	12/17/2014	05/08/2014	120	Pending
10	Site Restoration	05/09/2014	06/15/2014	30	Pending
11	Post-Construction Meeting/Final Walkthrough	06/25/2014	N/A	---	Pending
12	Decontamination/Demobilization	08/01/2014	08/15/2014	14	Pending
13	Remedy Monitoring	08/15/2014	02/15/2015	180	Pending
14	Develop and Finalize Remedial Action Report	02/15/2015	04/15/2015	120	Pending
15	Finalize Grant Close-out	04/15/2015	09/15/2015	150	Pending

[1] *Tasks identified as "Completed" have been completed as of 01/27/2014 with the initial grant award of $500,000 for "administrative purposes" and the grant award for "remediation purposes" totaling $2,635,882. The timeline for successful completion of Tasks identified as "Pending" are subject to EPA's approval of the revised work plan and budget and subsequent award of funds for "remediation purposes".*

D. Designation of Lead Site Project Manager

The lead site project manager for the Catholic 40 remediation will be Mr. Tim Kent, Environmental Director of the Quapaw Tribe Environmental Office (QTEO). The QTEO has coordinated with other Tribal departments including, but not limited to, the Tribal Realty Department and the Tribal Historic Preservation Department (THPO) in the process of planning the proposed remedial

response activities.

E. Community Relations Plan

A site-specific Community Relations Plan (CRP) has been developed by the Quapaw Tribe, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(iv). This Plan states that the Tribe will prepare Fact Sheets for Tribal members, host informational meetings, and post a sign at the site to inform the public about what is happening and where to call if they see any criminal activity or trespassing on the site. The Quapaw Tribe of Oklahoma will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan.

F. Health and Safety Plan

A site-specific Health and Safety Plan (HSP) has been developed by the Quapaw Tribe and submitted to EPA Region VI before field activities began, in accordance with 40 CFR Part 35 Subpart O, Section 35.6105(a)(2)(v). The HSP will ensure the protection of on-site personnel and area residents.

G. Quality Assurance

The QTEO is well aware of EPA's unwavering commitment to Quality Assurance and Quality Control (QA/QC). The QTEO is equally committed to the generation of sound, scientific, quality assured data along with the successful completion of quality projects. The QTEO is currently administering five (5) EPA grants under an existing EPA-approved Quality Management Plan (QMP). All remedial activities for the proposed project will comply with the existing Site-wide Quality Assurance Plan developed for EPA by CH2M Hill. The Quapaw Tribe submitted site-specific QA/QC Plans and a Quality Assurance Project Plan (QAPPs), all of which were approved by EPA before field work began.

H. Project Deliverables

Project deliverables will be both administrative and technical in nature. The administrative/grant deliverables will include 1) quarterly reporting to the EPA-designated Project Officer on the progress made toward individual work plan tasks along with financial updates, 2) a final report documenting the successful completion of all work plan tasks, and 3) all other certifications and grant forms typically required to successfully administer and close-out an EPA grant (i.e. FSR, MBE/WBE, etc.) The technical/remediation deliverables will include: 1) weekly conference calls with the EPA-designated Remedial Project Manager (RPM) to report on the progress made in planning, implementing, and finishing the proposed remedial project, 2) a final walk through with EPA staff and Tribal representatives prior to project close-out, and 3) a remedial action report upon project close-out. The target dates for these project deliverables are incorporated into the proposed project timeline in Section 2.C.

III. CERCLA ASSURANCES A. Operation and Maintenance

The Quapaw Tribe of Oklahoma will assume responsibility for all future operation and maintenance of the CERCLA-funded remedial action at the Catholic 40 for the expected life of the action as required by CERCLA Section 104(c).

B. Cost Sharing

The Quapaw Tribe of Oklahoma will not share in the cost of the CERCLA-funded remedial action at the Catholic 40 as Indian Tribes are not required to share in such costs according to 40 CFR Part 35 Subpart O, Section 35.6110(b)(3).

C. Twenty-Year Waste Capacity of Off-Site Disposal Location

A relatively small amount of source material will be disposed of on-site in an open mine shaft at the Catholic 40. Otherwise, all remaining source other material and TZ soils will be disposed of off-site at the EPA-approved OU4 Chat Repository located at the Central Mill Tailings Pond on E. 40 Rd. in Picher, OK. This repository is located on non-restricted fee land and is operated by EPA and its contractors. This repository has been receiving source material and TZ soils from other Distal Group remediation projects since 2009. This repository has more than adequate capacity to securely receive and dispose of all source material and TZ soils associated with the remediation of the Catholic 40.

D. Notification of out-of-an-area-of-Indian-Country transfer of CERCLA Waste

The Quapaw Tribe of Oklahoma will provide the Oklahoma Department of Environmental Quality (ODEQ) with written notification of off-site shipments of CERCLA waste from the Catholic 40 (tribal trust land) to the OU4 Chat Repository (non-restricted fee land), according to the requirements of 40 CFR Part 35 Subpart O, Section 35.6120.

IV. BUDGET NARRATIVE

See detailed budget breakdown attached.

EPA's Cost Estimate for the Exclusion Zone Remedial Action
Chat Base 011 and Transition Zone Soils
February 21, 2014

Item #	Item Description	Estimated Quantity	Units	Unit Cost	Estimated Cost	Assumptions
1	**Preparation of Site-Specific Plans and Reports**					
	a. Work Plan	1	Lump Sum	$2,500.00	$2,500	Footnote A
	b. Field Sampling Plan	1	Lump Sum	$9,000.00		NA*
	c. Quality Assurance Project Plan	1	Lump Sum	$9,000.00		NA
	d. Site Management Plan	1	Lump Sum	$1,500.00	$1,500	Footnote A
	e. Stormwater Pollution Prevention Plan	1	Lump Sum	$4,500.00	$4,500	Footnote A
	f. Construction Quality Assurance Plan	1	Lump Sum	$4,500.00		NA
	g. Transportation Plan	1	Lump Sum	$4,500.00		NA
	h. Disposition Plan	1	Lump Sum	$4,500.00		NA
	i. Mine Shaft Closure Plan	1	Lump Sum	$4,500.00		NA
	j. Closed Boring Abandonment Procedures	1	Lump Sum	$4,500.00		NA
	k. Site Health and Safety Plan	1	Lump Sum	$2,500.00		NA
	l. Waste Management Plan	1	Lump Sum	$4,500.00		NA
	m. Spill Response Plan	1	Lump Sum	$4,500.00		NA
	n. Community Relations Plan	1	Lump Sum	$4,500.00		NA
	Subtotal Item #1				$8,500	
2	**Develop RFP, evaluate proposals, and develop contract**					NA
	a. Development of RFP, proposals, and contract	1	Lump Sum	$11,000.00		NA
	Subtotal for Item #2				$0	NA
3	**Surveying**					
	a. Surveyor for site boundaries, grid areas, work areas	1	Survey	$13,000.00	$13,000	Footnote A
	b. Topographic survey of grids (post-remediation)	6	Grids	$1,105.00	$6,630	Footnote B
	c. Utility locate	1	Report	$1,500	$1,500	Footnote B
	d. Ground Penetrating Radar and Archeology Consultant	1	Lump Sum	$29,000.00	$29,000	Footnote A
	Subtotal Item #3				$50,130	

Item #	Item Description	Estimated Quantity	Units	Unit Cost	Estimated Cost	Assumptions
4	**Site Mobilization/Demobilization**					
	a. Mob/demob office trailer	2	EA	$420.00		NA
	b. Office trailer rental	2	Months	$372.00	$744	Footnote B
	c. Utilities (electrical and HVAC)	2	Months	$145.20	$290	Footnote B
	d. Three portable toilets x 5	2	Months	$520.00	$1,040	Footnote A
	e. Portable truck scales w/building and utilities	1	Months	$6,045.00	$6,045	Footnote B
	f. Safety zone fencing, signage, and barricades	1	Lump Sum	$6,240.00		NA
	g. Lighted traffic boards x 3	1	Months	$2,340.00	$2,340	Footnote B
	h. Mob/demob two excavators	4	EA	$600.00		NA
	i. Mob/demob two off-road trucks	4	EA	$600.00		NA
	j. Mob/demob two scrapers	4	EA	$600.00		NA
	k. Mob/demob wheel loader	2	EA	$600.00		NA
	l. Mob/demob grader	2	EA	$600.00		NA
	m. Mob/demob two dozers	4	EA	$600.00		NA
	n. Mob/demob skid steer w/sweeper	2	EA	$600.00		NA
	o. Mob/demob backhoe	2	EA	$600.00		NA
	p. Mob/demob trencher	2	EA	$600.00		NA
	q. Demob Scales	1	Lump Sum	$22,100.00		NA
	r. 15k Mini Excavator	2	Delivery	$1,500.00	$3,000	Footnote A
	Subtotal Item #4				$13,459	
5	**Site Preparation**					
	a. Prep site for office/utilities, install, and materials	1	Lump Sum	$26,000.00		NA
	b. Prep site for scales office/utilities, and materials	1	Lump Sum	$42,900.00		NA
	c. Install decon zone	1	Lump Sum	$4,550.00		NA
	d. Install protective fencing	1,000	LF	$6.50	$6,500	Footnote A
	e. Traffic controls	1	Lump Sum	$4,550	$4,550	Footnote B
	Subtotal Item #6				$11,050	

Item #	Item Description	Estimated Quantity	Units	Unit Cost	Estimated Cost	Assumptions
6	**Chat Base and TZ Soil Removal by Excavation and Hauling**					
	a. Excavate, load, haul, dump, and place	30,074	Tons	$11.00	$330,814	Footnote C
	b. Hand excavation of historically significant areas, with the aid of mechanical equipment	1,000	Tons	$130.00	$130,000	Footnotes C/D
	Subtotal Item #6				$460,814	
7	**Filling and Capping of Cased Borings, Mine Shafts, and Subsidence Features**					
	a. Filling of mine shaft	4	Lump Sum	$4,000	$16,000	Footnote E
	b. Filling and capping of one cased boring	2	Lump Sum	$1,000	$2,000	Footnote E
	c. Removal of asphalt and piles	185	Tons	$20.00		NA
	d. Filling of Subsidence Features	4	EA	$2,000.00	$8,000	
	Subtotal Item #7				$26,000	
8	**Water Management**					
	a. Silt curtain	1,000	LF	$6.00	$6,000	Footnote A
	b. Hay bales	642	Bales	$6.00		NA
	c. Rock ditch checks	520	Tons	$20.00		NA
	d. Rip rap	35	Tons	$50.00		NA
	e. Gabion baskets	10	Baskets	$200.00		NA
	f. Installation of SWPPP	1	Lump Sum	$10,000	$10,000	Footnote A
	g. Maintenance of erosion control	1	Lump Sum	$4,000	$4,000	Footnote B
	Subtotal Item #8				$20,000	
9	**Confirmation Sampling and Analysis**					
	a. Field sampling, compositing, and sieving	5	Event	$900.00	$4,500	Footnote A
	b. Laboratory analyses (10-day turnaround time)	60	Sample	$75.00	$4,500	Footnote A
	c. Laboratory analyses (3-day TAT)	18	Sample	$150.00		NA
	d. Data validation	12	Reports	$100.00	$1,200	Footnote A
	Subtotal Item #9				$10,200	

Item #	Item Description	Estimated Quantity	Units	Unit Cost	Estimated Cost	Assumptions
10	**Construction of Northern Access Road**					NA
	a. Construction of road for ingress and egress	1	Lump Sum	$77,433		NA
	Subtotal Item #10				$0	NA
	Total Direct Capital Costs (TDCC), Line Items #1 thru 10				**$600,153**	
	Indirect Capital Costs (ICC)					
	a. Project management (5% of TDCC)				$30,008	Footnote F
	b. Construction oversight and management (6% of TDCC)				$36,009	Footnote F
	c. Technical support (2% of TDCC)				$12,003	Footnote F
	d. Contingencies (20% of TDCC)				$120,031	Footnote F
	e. Personnel, fringe benefits, travel, and supplies					NA
	1. Personnel					NA
	2. Fringe					NA
	3. Travel					NA
	4. Supplies					NA
	5. QTEO direct cost @ 53.42% of $153,318 (total costs for personnel, fringe, travel, and supplies)					NA
	f. Performance and payment bond					NA
	g. Health and safety incentive (1% of Budget)				$6,002	Footnote G
	Total Indirect Capital Costs (TICC)				**$204,053**	
	Total Estimated Costs for Remedial Action (TDCC plus TICC)				**$804,206**	Footnote H

*NA – Not Applicable

Footnotes:

A. These estimates are derived from the Tribe's work plan and budget proposal (dated February 11, 2014) and appear reasonable for the work proposed. The estimated total cost for the "Ground Penetrating Radar" (GPR) and "Archeology Consultant" was derived from a lump sum of $14,000 for the GPR work and the use of the consultant for 30 days at $500/day, which totals the estimated cost of $29,000. The GPR is needed in order to search the exclusion zone area for unmarked graves. A headstone was noted in this area during the EPA's inspection of the Site in January 2014.

B. These estimated costs are derived from the EPA's previous cost estimate dated March 19, 2013.

C. The 31,074 tons (total) of chat base and transition zone (TZ) material included these line items were derived from the Tribe's work plan and budget proposal (dated February 11, 2014) and appear reasonable for the work proposed.

The unit cost of $11/ton included in this line item, and also included in the QTEO's amended budget proposal (dated February 11, 2014), is the amount the EPA previously provided to the QTEO as a cost amount which should not be exceeded. This amount was provided at the request of the QTEO and was derived from the unit cost of $9/ton in the EPA's original cost estimate dated January 25, 2013 (EPA's Cost Estimate for Remedial Action, Chat Base 011 and Transition Zone Soils). This unit cost was derived from the following documentation:

> The unit cost of $9/ton is derived from the table titled "Summary of Distal Groups/Sites Remediation (Source Material Operable Unit 4)" (attached Table 1) for the remedial actions completed at Distal 1 North, Distal 1 South, Distal 2, Distal 3, and the CB223 Subsidence Group, which are highlighted in Table 1. The total costs included in this table include, but are not limited to, the following: project management, engineering support, health & safety, quality control, chat reuse coordination, enforcement sampling, community and stakeholder involvement\communication, acquiring access agreements, site reconnaissance, geotechnical and analytical sampling/analysis, subcontractor procurement (including management and oversight), site preparation (clearing, grubbing, and road building), remediation (excavation, transportation, and disposition), site restoration, data management, Remedial Action Report preparation\submittal, watershed planning, surveying, rental (office trailer, site trucks, sampling and H&S equipment, etc).
>
> The unit cost of $9/ton was also derived from the table titled "Listing of Completed RA Construction Subcontracts (Tar Creek OU 4 RA)" (attached Table 2) for the remedial actions completed at Distal 1 North, Distal 1 South (and residential sites), Distal 2, Distal 3 (and repository operations), and the CB223 Subsidence Group, which are highlighted in Table 2. The total costs included in this table include only costs associated with "site cleanup" and "repository construction and operation" subcontracts and does not include "subcontracted construction support services" (*e.g.*, survey, geotech, scales rental, etc.). References to construction activities and subcontracted services were provided in the document titled "Final Remedial Design, Distal Areas, Source Material Remedial Design, Tar Creek Superfund Site, Operable Unit 4, Version 1.0 (September 2009)." This document stated that construction activities included the following: excavation of source materials (chat and fine tailings) and transition zone soils, transportation of excavated source materials and soils to disposition points, stockpiling and management of materials, working of the excavation and surrounding areas to naturally build soil and avoid backfill, and site restoration. This document also stated that other subcontracted services included surveying, geotechnical testing services, and laboratory analysis of soil and water.
>
> The unit cost of $9/ton is derived by averaging the total subcontracted costs from Table 2 (for Distal 1 North, Distal 1 South, Distal 2, Distal 3, and the CB223 Subsidence Group) and dividing by the average of the "Total Material Remediated (Tons)" from Table 1 for each respective distal group resulting in the following equation: $2,173,540/242,395 tons = $9/ton.

D. This unit cost was derived from the Tribe's work plan and budget proposal (dated February 11, 2014) and appears reasonable for the work proposed. It is expected that this work will involve excavation by hand and will be resource extensive and time consuming in order to protect the Quapaw Tribe's structures of historical and cultural significance.

E. These estimates are based on the EPA's review of the construction activities required to fill mine shafts and cased borings.

F. These estimated percentage costs were derived from the percentage estimates included in Table 11 (Alternative 5) of the document titled, "Record of Decision; Operable Unit 4; Chat Piles, Other Mine and Mill Waste, and Smelter Waste; Tar Creek Superfund Site" (February 2008). The "indirect capital costs" associated with project management, construction oversight and management, technical support, and contingencies are estimated at 5%, 6%, 2%, and 20% of total "direct capital costs," respectively. The estimated costs included under project management, construction oversight and management, and technical support includes those costs associated with an engineer/construction manager. .

G. This incentive is for the Tribe to implement effective health and safety management systems during the performance of the Remedial Action. The rate of 1% for this incentive is derived from the Tribe's work plan and budget proposal (dated February 11, 2014) and appears reasonable for the work proposed.

H. Based on a review of Table 2 and the document titled "Final Remedial Design, Distal Areas, Source Material Remedial Design, Tar Creek Superfund Site, Operable Unit 4, Version 1.0" (September 2009), the estimated costs for preoperational monitoring and maintenance of the remedy, decontamination, and site restoration, which are included in the QTEO's work plan and budget proposal (dated February 11, 2014), are assumed to be included in the unit cost described in Footnote C.

Additionally, it is our understanding that the transition zone (TZ) soils will not be excavated and hauled to the central repository as indicated in the QTEO's amended work plan and budget proposal (dated February 11, 2014). The QTEO has stated that they have submitted soil samples for laboratory analyses to aid in determining how to address the TZ soils (*e.g.*, deep tilling).

Table 1
Summary of Distal Groups/Sites Remediation (Intended for EPA Use Only)
Source Material Operable Unit 4
Tar Creek Superfund Site, Ottawa County, Oklahoma

INTENDED FOR EPA USE ONLY

Remediation Group/Site	Distal Zone	Status	Source Material Remediated[a]			Total Material Remediated[a] (Tons)	Material[a] Disposition Location					Area Remediated (Acres)	Average Distance to excavated TZ Soil from the Chat Feature Perimeter (ft)	Cost			CH2M HILL Subcontractor for Remedial Construction Activities	Comments
			Chat Piles	Chat Bases	Fine Tailings		Chat Processor (Tons)	Central Mill Repository (Tons)	On-property Subsidence Features/ Mine Shafts/Cover Installation (Tons[b])	CB223 Subsidences (Tons)	Other[c]			Total Cost[d] (CH2M Labor, Subcontractors, Expenses)	Cost Per Acre Remediated	Cost Per Ton Remediated Material		
REMEDIATION COMPLETED																		
Distal 1 North	SE Distal Zone	Construction completed	CP092, CP093, CP094	CB230, CB232, CB233, CB234, CB235 CB236	None	190,287	20,252	170,035			318 tons (Wood chips to Nature's Fuel for reuse)	36	106	$3,613,547	$100,376	$19	Kingston Environmental Svs./ Delmonico	
Distal 1 South	SE Distal Zone	Construction completed	CP099, CP100	CB239	None	43,186	10,401	26,724	3,019	3,042		8.2	46	$1,098,893	$134,011	$25	DNT Environmental Svs.	RA activities initiated at CP104 under Distal 1 South but terminated because the chat was found to extend into a pond adjacent to CP104. RA activities will be completed under Distal 6
Distal 2	NE Distal Zone	Construction completed	None	CB044, CB044-S1, CB046, CB046-S1 through CB046-S8, CB048, CB048-S1 through CB048-S3, CB049, CB053, CB053-S1 through CB053-S5	None	564,823	23,328	514,061	2,415	20,684	4,435 tons (TZ soil to Hockerville demolition debris site)	149	274	$8,087,665	$56,557	$14	Etech	
Distal 3	SE Distal Zone	Construction completed	CP088, CP088-S1 through CP088-S3	CB216, CB219, CB221, CB221-S1, CB221-S2, CB222	None	301,304	14,613	265,468		21,183		69.7	26	$5,749,468	$82,489	$19	QEPI/HIS	RA activities initiated at CB214, CB217 under Distal 3 but terminated due to chat in the vicinity of Beaver Creek. RA activities will be completed during future Chat-in-Stream Remediation
CB223 Subsidence Group	NE Distal Zone	Construction completed	None	CB223	None	112,315		35		112,280	700 CY[e] (Tree debris to Nature's Fuel for reuse)	25.3	35	$1,748,144	$69,097	$16	DNT Environmental Svs.	
Smelter Site	NE Distal Zone	Construction completed	None	None	None	42,889		42,889				27.5	281	$1,680,245	$61,100	$39	Etech	
Residential Sites		Construction completed	None	None	None	3,556		3,556				1.7	NA	$170,379	$100,223	$48	DNT Environmental Svs.	3 Properties (RS2318-16, RS2332-14, & RS2431-22)
Various Sites		Completed	CB206	CP055, CP057 CP058, CP086	NA	129,660 (see comment at right)		129,660 (see comment at right)				NA	NA	Included in repository costs	NA	NA	Kingston Environmental Svs[f].	Material totals are not included in the cost per acre\ton calculation due to associated cost can not be accurately determined
Housing relocation demolition-related construction and demolition (C&D) debris		Completed				42,932 CY[e] of C&D Debris (not included in total tons remediated)		42,932 CY[e] of C&D Debris (not included in total tons remediated)				NA	NA	Included in repository costs	NA	NA	Kingston Environmental Svs[f].	Material totals are not included in the cost per acre\ton calculation due to associated cost can not be accurately determined
REMEDIATION INITIATED AND IN PROGRESS (TOTAL VOLUME REMEDIATED AT EACH OF THESE SITES WILL BE MORE WHEN COMPLETE)																		
CB143-CB146-CB147 Area	NE Distal Zone	In progress	None	CB143, CB146, CB147	None	82,696		21,890	60,806		100 CY[e] (Tree debris to Nature's Fuel)	NA	245	$1,070,051	NA	$13	Kingston Environmental Svs.[f]	
Distal 4	SE Distal Zone	In progress	CP091, CP093-S1 through CP093-S5, CP094, CP094-S1	CB231	FT063	252,761	170,008	80,228	2,525		4,400 CY[e] (Tree debris to Nature's Fuel)	NA	232	$2,613,070	NA	$10	Kingston Environmental Svs.[f]	
Distal 5	SE Distal Zone	In progress	CP058, CP059	CB156, CB157	None	91,812	29,716	61,059	1,037		4,150 CY[e] (Tree debris to Nature's Fuel)	NA	152	$1,293,219	NA	$14	DNT Environmental Svs.	
Totals (Remediation Completed, Initiated and In Progress; not including "various sites" and C&D debris)						1,685,690	268,318	1,185,946	69,802	157,189		311	151	$27,124,683	$71,125	$16		
REPOSITORY INFORMATION																		
Central Mill Repository Construction and Operation (TO 43)		Construction completed Operation Continuing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	$4,970,874	NA	NA	Kingston Environmental Svs.	In addition to material received from the Distal Groups/Sites, the following material was received at the repository; 1) 111,164 tons of chat\TZ soil from CB206, CP055, CP058, and CP86 used as road building and repository base material 2) 4,186 tons of chat from CP057 used for tipping pad construction 3) 7,788 CY (10,124.4 tons) of OU2 chat\TZ soil 4) 42,932 CY of housing relocation C&D debris
Central Mill Repository Construction and Operation (TO 53)		Construction completed Operation Continuing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	$3,324,126	NA	NA	Kingston Environmental Svs[f]. & QEPI\HSI	
TOTALs						1,811,164								$35,419,682				

Summary of Distal Groups/Sites Remediation (Intended for EPA Use Only)
Source Material Operable Unit 4
Tar Creek Superfund Site, Ottawa County, Oklahoma

INTENDED FOR EPA USE ONLY

Remediation Group/Site	Distal Zone	Status	Source Material Remediated[a]: Chat Piles	Source Material Remediated[a]: Chat Bases	Source Material Remediated[a]: Fine Tailings	Total Material Remediated[a] (Tons)	Material[a] Disposition Location: Chat Processor (Tons)	Material[a] Disposition Location: Central Mill Repository (Tons)	Material[a] Disposition Location: On-property Subsidence Features/ Mine Shafts/Cover Installation (Tons[b])	Material[a] Disposition Location: CB223 Subsidences (Tons)	Material[a] Disposition Location: Other[c]	Area Remediated (Acres)	Average Distance to excavated TZ Soil from the Chat Feature Perimeter (ft)	Cost: Total Cost[d] (CH2M Labor, Subcontractors, Expenses)	Cost: Cost Per Acre Remediated	Cost: Cost Per Ton Remediated Material	CH2M HILL Subcontractor for Remedial Construction Activities	Comments
REMEDIATION NOT BEGUN (IN PREPARATION)																		
Distal 7 North	SE Distal Zone	In preparation	CP101, CP102, CP103, CP105	CB241, CB241-S1, CB241-S2, CB242, CB243	None	Remediation not started												
Distal 7 South	SE Distal Zone	In preparation	CP095, CP096, CP097,	CB238, CB240	None	Remediation not started												
Distal 8	SE Distal Zone	In preparation	None	CB011	None	Remediation not started												Known locally as Catholic 40
Distal 9	NE Distal Zone (CB041, CB042) &	In preparation	None	CB008, CB041, CB042, CB213	None	Remediation not started												
Distal 10	Elm Creek Distal Zone	In preparation	None	CB017, CB018 (portion), CB019, CB020	None	Remediation not started												
Beaver Creek North	SE Distal Zone	In preparation	CP057 (edge), CP060	CB155 (edge), CB214, CB215, CB217, CB220	None	Remediation not started												Includes Beaver Creek streambed north of E 50th Rd, and finishing CB214, CB217, CB220 which were originally considered in Distal 3
Distal 11 (going to Hockerville Subsidence)	NE Distal Zone	In preparation	CP054	CB224, CB228	None	Remediation not started												Includes the edge of CB140 or associated remaining TZ soil that may be present on the CP054 property
Hockerville Subsidence	NE Distal Zone	In preparation	None	None	None	Remediation not started												
Distal 12	SE Distal Zone	In preparation	CP055	CB144, CB148, CB150	None	Remediation not started												

Any information contained herein shall not be disclosed outside EPA and shall not be duplicated, used or disclosed in whole or in part for any purpose other than its intended use

The material totals and cost values used in this table are for remediation activities performed from January 2010 through December 2011 under Task Order No. 0043 and No. 0053.

[a] Material quantities include chat, development rock, fine tailings, smelter waste (Smelter Site only), TZ sod, and associated remediation waste (wood debris, building and concrete debris, etc.

[b] Consolidation of source material into subsidence features and mine shafts were estimated in cubic yards (based on truck load counts or survey) and converted to tons based on 1.3 tons per cubic yard

[c] The majority of material disposition for the distal areas is at chat processors, the Central Mill Repository, on-property features, or CB223 subsidence. Other disposition locations not included in the previous list are provided and identified in this column

[d] Costs include but are not limited to the following: project management, engineering support, health & safety, quality control, chat reuse coordination, enforcement sampling, community and stakeholder involvement\communication, acquiring access agreements, site reconnaissance, geotechnical and analytical sampling/analysis, subcontractor procurement, management, & oversight, site preparation (clearing and grubbing and road building), remediation (excavation, transportation, and disposition), site restoration, data management, Remedial Action Report preparation\submittal, watershed planning, surveying, rental (office trailer, site trucks, sampling and H&S equipment, etc.

[e] Conversion from cy to tons was not performed; an accurate conversion cannot be performed due to the irregular nature of material loaded into trucks

[f] Subcontractor terminated prior to construction completion; work scope remaining will be completed by a replacement subcontractor

NA Not applicable

CY Cubic yards

TABLE 2

Listing of Completed RA Construction Subcontracts

Tar Creek OU4 RA

TO No.	PO No.	Vendor	Final Amount	Scope
TO-043	814375	Kingston Environmental Services, Inc.	$23,418.12	Distal Area 1 North
TO-043	813913	QEPI/HIS	$1,505,787.89	Distal Area 3
TO-043	813643	DNT Environmental Services	$504,923.85	CB223
TO-043	813443	Etech	$3,139,488.72	Distal Area 2
TO-043	813207	Delmonico	$1,386,710.10	Distal Area 1 North
TO-043	813128	Kingston Environmental Services, Inc.	$2,546,089.16	Repository Construction and Operations
TO-043	813112	DNT Environmental Services	$794,183.66	Residential Sites and Distal 1 South
TO-053	815082	Etech	$860,624.01	Smelter Site RA
TO-053	814842	DNT Environmental Services	$390,478.01	CB223 RA
TO-053	814627	Etech	$1,003,025.42	Distal 2
TO-053	813207	Delmonico	$300,000.00	Distal Area 1 North
TO-053	815085	Kingston Environmental Services, Inc.	$1,338,418.54	Distal Area 4*
TO-053	815084	Kingston Environmental Services, Inc.	$548,081.88	CB143/146/147 (O'Neal)*
TO-053	814630	Kingston Environmental Services, Inc.	$1,318,714.63	Repository Construction and Operations
TO-053	813207	Kingston Environmental Services, Inc.	$159,360.84	Distal Area 1 North
TO-053	814629	QEPI/HIS	$1,660,321.61	Distal Area 3 and Repository Operations

Notes: * RA Subcontracts were terminated, work scope remains and will be completed by procuring new subcontractors. PO Amount shown is for work completed and reimbursed through Nov 2011.